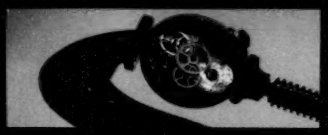
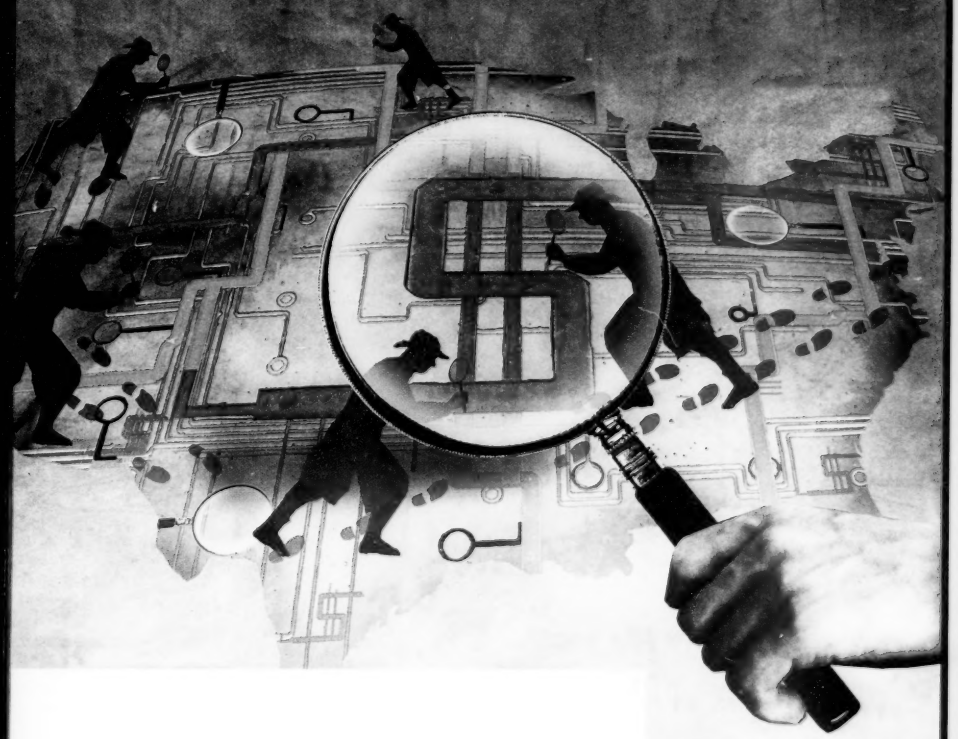


The Incredible Shrinking Data Center: Some IT managers say smaller is better, as they reap the benefit of lower real-estate and energy costs. PAGE 31

COMPUTERWORLD®

Follow the Money

State CIOs are scrambling to build systems that track every penny of the $787 billion economic stimulus package. PAGE 24



Inside

NOVEMBER 2, 2009
VOL. 43, NO. 32 $5/COPY

News Analysis

Microsoft's standing as an OS developer is on the line with its release of Windows 7. PAGE 14

H1N1's national emergency status may spur IT to refocus on pandemic preparedness plans. PAGE 16

THE GRILL: IT pioneer Gordon Bell thinks it won't be long before we can all store digital archives of our lives in the cloud. PAGE 18

Opinions

Do you still ban computer games at work? It's time to reconsider. PAGE 30

Companies that outsourced IT will be laggards in the economic recovery. PAGE 44

Careers

Create a résumé that'll stand out and help you land that job. PAGE 40

COMPUTERWORLD.COM

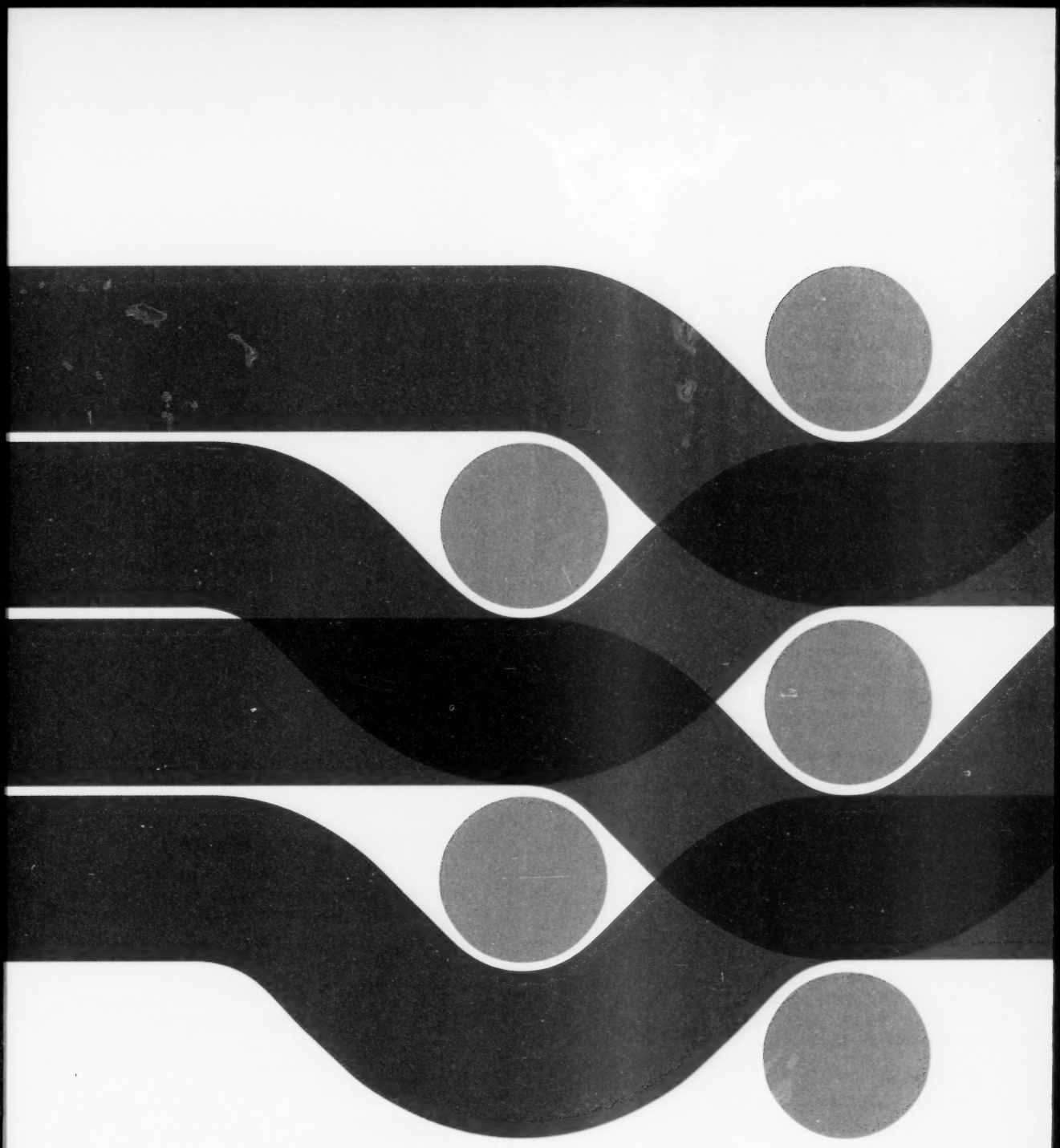
Smarter technology for a Smarter Planet:

Building a fluid enterprise.

To date, companies have spent billions of dollars building automated systems to manage vertical business functions—ERP, SCM, CRM, etc. Unfortunately, the majority of these systems were never designed to talk to each other. It's no wonder then that the average employee wastes 5.3 hours per week working within these siloed and inefficient processes. It's imperative that businesses find smarter ways to work.

IBM's comprehensive business process management solutions integrate the different pieces of your business, enabling fluid workflows. IBM has given over 5,000 companies the visibility and automated processes they need to optimize performance—from a global freight company that reduced development costs by 30% to an oil producer that is measuring their oil fields in real time, doubling the industry's average recovery rates.

A smarter business needs smarter software, systems and services. Let's build a smarter planet. ibm.com/flexible



IBM, the IBM logo, ibm.com, Smarter Planet and the planet icon are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at www.ibm.com/legal/copytrade.shtml. © International Business Machines Corporation 2009.

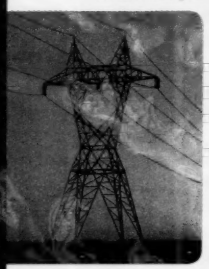
Inside

COMPUTERWORLD ■ NOVEMBER 2, 2009

■ HEADS UP

8 Gartner recommends that you **set guidelines** for employees representing your company in **virtual worlds.** | In six years, **Microsoft's Patch Tuesdays** have addressed **745 security vulnerabilities.**

10 Georgia Tech is turning **unemployed IT professionals** into high school **computer science teachers.** | **Despite tight budgets,** businesses are continuing to support **social networking activities.**



11 Power outages threaten to derail efforts to cultivate **IT businesses in Africa.**

■ NEWS ANALYSIS

14 Microsoft's OS Future Rides on Windows 7. Some early users are happy with new features in Vista's successor, but analysts say it's too early to know whether Microsoft can maintain its standing as an operating system developer.

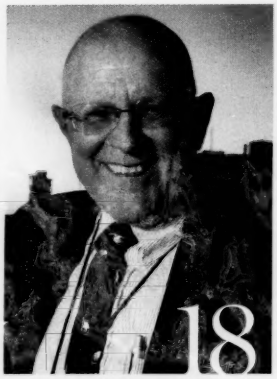
16 Swine Flu Emergency Should Put IT on Alert. The declaration of a national H1N1 flu emergency should raise a red flag for IT managers at businesses that still aren't prepared for a pandemic.

■ OPINION

30 Bart Perkins suggests that corporations might want to reconsider their blanket bans on video games in the workplace.

38 Thornton A. May wants to create organizational charts that are truly useful in the 21st century.

44 Paul M. Ingevaldson predicts that the companies that underperform when the economy recovers will include those that outsourced IT.



18

■ DEPARTMENTS

18 The Grill: Gordon Bell, a principal researcher at Microsoft, is archiving his whole life, from vacations to workdays. The book *Total Recall*, which he co-authored with Jim Gemmell, tracks the project.

36 Security Manager's Journal: Better Security for Not Quite All. A new policy preventing users from opting out of password-protected screen locks actually reduces the level of protection for some.

40

40 Career Watch: Hiring will be cautious for the rest of the year, says Robert Half Technology. Plus, advice on marketing yourself with a résumé that's not run-of-the-mill.

42 Shark Tank: Network admin raises a stink about a database created on the main C: drive of a production server – until it's determined who created that database.

■ ALSO IN THIS ISSUE

Online Chatter	6
Company Index	42

24

■ FEATURES

24 Follow the Money

COVER STORY: State IT organizations are scrambling to whip up new processes and tools to accurately track and account for their states' shares of the $787 billion stimulus pie.

31 The Incredible Shrinking Data Center

Some enterprises are downsizing their data centers to help save on real estate and energy costs.

34 Up-to-the-Minute Medicine

MIQS Inc. earned a 2009 Computerworld Honors award for its Disease Manager Plus software. Developed with the help of Dr. Victor Pollak, the software combines electronic medical records with a real-time reporting engine so doctors can track trends in patients' medical histories.

Introducing AND. It's the new OR.

Finally, a storage solution that doesn't force you to choose either cost efficiency or improved business performance. NetApp's uncompromising approach to storage and data management can both lower IT costs and help to bolster your company's competitiveness. Find out how storage efficiency without compromise can help your company go further, faster. Visit netapp.com/and today.

NetApp
Go further, faster

Specifications are subject to change without notice. NetApp, the NetApp logo, and Go further, faster are trademarks or registered trademarks of NetApp, Inc. in the U.S. and other countries. All other brands or products are trademarks or registered trademarks of their respective holders and should be treated as such.

© 2009 Citrix Systems, Inc. All rights reserved. Simplicity is Power and its stylized treatment and XenServer are trademarks of Citrix Systems, Inc.

Y IS POWER

The power of server virtualization.

Crush cost and complexity like a can.

With Citrix® XenServer,™ you can eliminate unnecessary servers and the costs associated with them. Instantly.

And best of all, for free. Makes you think twice about complex, expensive, proprietary virtualization alternatives. XenServer puts more control in your hands than you've ever had before. Feel the power of simplicity.

Simplicity is power. Citrix.

CITRIX®

Citrix.com/SimplicityIsPower

COMPUTERWORLD

P.O. Box 9171
492 Old Connecticut Path
Framingham, MA 01701
(508) 879-0700
Computerworld.com

■ EDITORIAL

Editor in Chief
Scot Finnie

Executive Editors
Mitch Betts, Julia King (events)

Managing Editors
Michele Lee DeFilippo (production), Sharon Machlis (online), Ken Mingis (news)

Director of Blogs
Joyce Carpenter

Art Director
April Montgomery

Technologies Editor
Johanna Ambrosio

Features Editors
Valerie Potter, Ellen Fanning (special reports), Barbara Krasnoff (reviews)

News Editors
Mike Bucken, Marian Prokop

Senior Editor
Mike Barton (new media)

National Correspondents
Julia King, Robert L. Mitchell

Reporters
Sharon Gaudin, Matt Hamblen, Gregg Keizer, Eric Lai, Lucas Mearian, Patrick Thibodeau, Jaikumar Vijayan

Assistant Managing Editor
Bob Rawson (production)

Editorial Project Manager
Mari Keefe

Associate Editor, Community
Ken Gagné

Office Manager
Linda Gorgone

Contributing Editors
Jamie Eckle, Preston Gralla, Tracy Mayor

■ CONTACTS

Phone numbers, e-mail addresses and reporters' beats are available online at *Computerworld.com* (see Contacts link at the bottom of the home page).

Letters to the Editor
Send to letters@computerworld.com. Include an address and phone number for immediate verification. Letters will be edited for brevity and clarity.

News tips newstips@computerworld.com

Subscriptions and back issues
(888) 559-7327, cw@omeda.com

Reprints/permissions
The YGS Group, (800) 501-9571, ext. 180, computerworld@theygsgroup.com

■ ONLINE CHATTER

RESPONSES TO:

Microsoft's Reputation, Future Riding on Windows 7

Oct. 22, 2009

As much time and money as Vista has cost me, Microsoft should be giving Windows 7 away.
■ **Submitted by:** *Jim*

Windows 7 is warmed-over Vista with even more eye candy. And the prices they're charging for this service pack are just way out of line.
■ **Submitted by:** *Anonymous*

It's not a bad OS, as far as stability and performance go. However, the global consumer PC industry itself will be largely sidelined in a few years. Other devices, particularly smartphones, are going to shrink the PC market by making owning a PC optional for using the Internet. This will be especially true in the developing world, which is the market that has been driving PC market growth. The billions who live there may skip owning a PC altogether.
■ **Submitted by:** *Eldon*

My copy of Windows 7 Ultimate is arriving today and I look forward to it. I've been using Vista Ultimate x64 since February 2007 on a custom rig that I built well above the minimum specs for Vista. That rig has been rock-solid for almost three years. I run Visual Studio, Adobe CS4, Expression Studio, Office 2007, etc., and the computer serves as a mission-critical development rig for my business. Nothing I've ever thrown at Vista has ever made it crash or even hiccup.
■ **Submitted by:** *NeuroWin7*

Windows 7 is awesome. I have been using this OS since the beta version. I am currently using the RC1 release and am very pleased with the performance. If you decide to go with this OS, do not perform an upgrade; do a clean install. Back up all of your data first, then do the install and perform a restore using the Windows 7 backup/restore tool. This tool is the most complete/robust backup app I have ever used. It works great.
■ **Submitted by:** *Seven*

JOIN THE CHATTER! *You, too, can comment directly on our stories, at* **computerworld.com.**

COMPUTERWORLD.COM

Find these stories at computerworld.com/more

The Cloud Forecast

Early adopters are focused on building private clouds, but they're planning for mixed public-private cloud setups in the future.
computerworld.com/s/article/9139413

Corporate Users Bullish on Windows 7

Many companies will go straight from XP to Microsoft's new OS.
computerworld.com/s/article/9139717

The Case Against Biometrics

Identity theft is bad, but it could get worse once our personal data is tied to biometric identifiers. **computerworld.com/s/article/9139965**

Avoiding Death by E-mail

Corporate e-mail is suffocating us. Here's one CEO's solution to the problem.
computerworld.com/s/article/9139896

Do You Think You Don't Need Buy-in? Think Again

Getting things done in corporate IT involves more than telling your boss, "If you want to accomplish *this*, you have to do *that*."
computerworld.com/s/article/9139898

5 Ways to Overclock A Netbook (Really!)

Yes hardware this tiny *can* be tweaked.

We explore five ways to turn netbooks up to 11.
computerworld.com/s/article/9139642

Sprint

The Now Network™

The end of phone tag. Turn your desk phone and mobile phone into one with Sprint Mobile Integration. You'll have one number, one voicemail and one easy way to control mobile usage. Simplify the way your company stays in touch. Make it easier for clients to reach you. And reduce company telecom expenses. Less dialing, happier clients. Productivity starts now.

1-866-653-1056 sprint.com/convergence

©2009 Sprint. Sprint and the logo are trademarks of Sprint. Other marks are the property of their respective owners.

Fresh Insights
New Trends
Great Ideas

HeadsUp

TORLEY / LINDEN LAB

VIRTUAL WORLDS

Employee Avatars Will Need Dress Codes

MANAGERS DON'T want an employee showing up at a company function on Second Life as a green spiky animal or wearing barely-there club attire. So analysts at Gartner Inc. recently recommended that as more companies conduct business in virtual worlds, employers should establish ground rules regarding employee avatars.

Gartner predicted that by the end of 2013, 70% of companies will have set behavior guidelines and dress codes for employees who use the remotely controlled online characters in business settings.

"We advise establishing codes of behavior that apply in any circumstance when an employee is acting as a company representative, whether in a real or virtual environment," Gartner analyst James Lundy said in a statement. For example, whatever rules apply to Web activities such as blogging can be extended to cover virtual worlds, except that visual environments also require a dress code.

To avoid problems with employees mixing their personal and professional virtual lives, companies should suggest that employees use one avatar for work interactions and a different one for personal activities, Gartner said.

Amanda Van Nuys, head of enterprise marketing at Linden Lab, which operates Second Life, agreed about the need for separate work and personal avatars.

"If virtual work is to be taken seriously, then our avatars need to look — and act — as professional as we do in a physical workplace," she said in a blog post.

– Mitch Betts

COMPUTERWORLD.COM

SECURITY MONITOR

Microsoft Patch Tally: 6 Years, 745 Vulnerabilities

With its massive security update last month, Microsoft Corp. marked the end of the sixth year since it moved to a monthly patch schedule. An informal count of releases in Microsoft's bulletin archives shows that the company has released about 400 security bulletins since October 2003.

The bulletins have addressed about 745 vulnerabilities across almost every Microsoft product. More than half of the bulletins (230) have addressed vulnerabilities that Microsoft called "critical," meaning they would allow attackers to take full administrative control of a system from a remote location.

The total number of flaws disclosed and patched by the software maker so far this year stands at about 160; Microsoft reported 155 for all of 2008. The tally for the past two years is more than double the number of flaws disclosed in 2004 and 2005, the first two full years of Patch Tuesdays.

The last time Microsoft didn't have any patches on a Patch Tuesday was March 2007. In the past six years, Microsoft has had just four patch-free months – two of which were in 2005. In contrast, the company issued patches for 10 or more vulnerabilities on more than 20 occasions and patches for 20 or more flaws in a single month on about 10 occasions.

– JAIKUMAR VIJAYAN

HARNESS THE POWER OF VIRTUALIZATION FOR YOUR BUSINESS.

The IBM® System x3550 M2 Express, powered by the Intel® Xeon® processor 5500 series, is one of the industry's leading x86 servers for virtualization. With its Integrated Management Module, you can easily manage, monitor and troubleshoot your physical and virtual servers locally and remotely. Allowing you to reduce the cost of managing your IT.

IBM express advantage™

IBM SYSTEM x3550 M2 EXPRESS

$2,589

OR $67/MONTH FOR 36 MONTHS[1]

PN: 7964-E2U

Featuring up to 2 Intel® Xeon® processor 5500 series

Energy-efficient design incorporating low 675 W and 92% efficient PS, 6 cooling fans, altimeter.

VMware® vSphere™ 4.0 ESSENTIALS KIT

License, Subscription and Support required

License Only: VMware vSphere 4.0 Essentials Kit, 3-2 Socket Hosts, PN: 4817VA8 $879

Subscription Only: VMware vSphere 4.0 Essentials Kit - 3-2 Socket Hosts, PN: 4817SA8 - 1 year, $119

VMware RTS: 1-year support, PN: 51J8632 $284

IBM SYSTEM STORAGE™ DS3200 EXPRESS

$4,495

OR $116/MONTH FOR 36 MONTHS[1]

PN: 172621X

External Disk Storage with 4 Gbps Fibre Channel interface technology

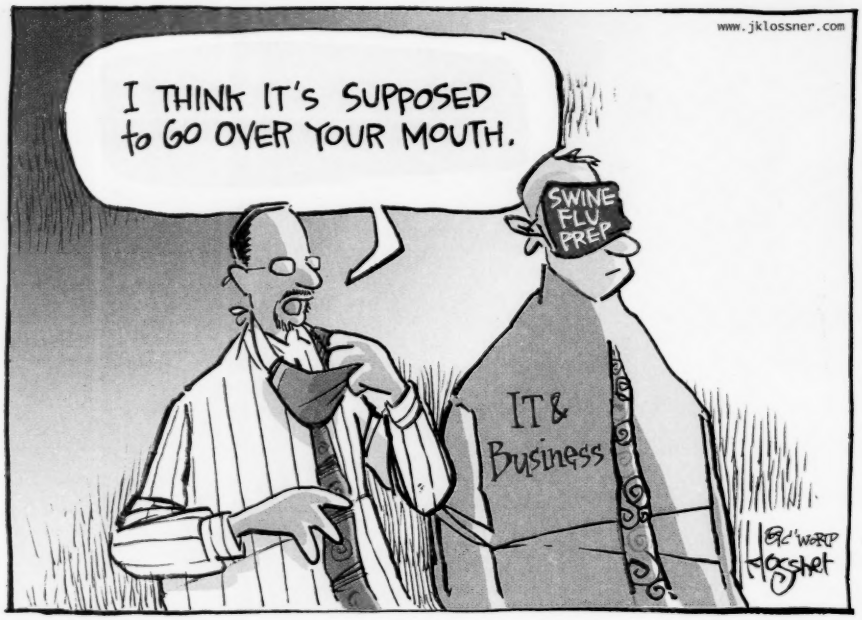
Scalable to 3.6 TB of storage capacity with 300 GB hot-swappable SAS HDDs or up to 9 TB of storage capacity with 750 GB hot-swappable SATA HDDs

LEARN MORE
about the benefits of virtualization with IBM and VMware

ibm.com/systems/virtualize
866-872-3902 (mention 6N8AH20A)

[1]IBM Global Financing offerings are provided through IBM Credit LLC in the United States and other IBM subsidiaries and divisions worldwide to qualified commercial and government customers. Monthly payments provided are for planning purposes only and may vary based on your credit and other factors. Lease offer provided is based on a FMV lease of 36 monthly payments. Other restrictions may apply. Rates and offerings are subject to change, extension or withdrawal without notice. VMware and vSphere are registered trademarks of VMware, Inc. www.vmware.com. IBM, the IBM logo, IBM Express Advantage, System Storage and System x are registered trademarks or trademarks of International Business Machines Corporation in the United States and/or other countries. For a complete list of IBM trademarks, see www.ibm.com/legal/copytrade.shtml. Intel, the Intel logo, Xeon and Xeon Inside are trademarks of Intel Corporation in the U.S. and other countries. All other products may be trademarks or registered trademarks of their respective companies. All prices and savings estimates are subject to change without notice, may vary according to configuration, are based upon IBM's estimated retail selling prices as of 7/1/09 and may not include storage, hard drive, operating system or other features. Reseller prices and savings to end users may vary. Products are subject to availability. This document was developed for offerings in the United States. IBM may not offer the products, features, or services discussed in this document in other countries. Prices are subject to change without notice. Starting price may not include a hard drive, operating system or other features. Contact your IBM representative or IBM Business Partner for the most current pricing in your geographic area. © 2009 IBM Corporation. All rights reserved.

BETWEEN THE LINES
By John Klossner



EDUCATION

Laid-off IT Pros Head to the Classroom

A GOVERNMENT GRANT is helping 30 unemployed IT professionals in Georgia start new careers as high school computer science teachers.

With a $2.5 million grant from the National Science Foundation, the Georgia Institute of Technology's College of Computing has launched "Operation Reboot." The program pairs a laid-off IT professional with an existing high school teacher for at least one year, "allowing the IT professional to learn the ins and outs of a classroom, and the teacher to get an education in IT," the college said in a statement.

The IT professionals will receive an initial teaching certificate with a computer science "endorsement," an add-on that signifies special expertise.

"Through the teacher workshops at Georgia Tech, courses needed for certification, co-teaching and mentoring, we will transform these IT workers' identity into that of a computing teacher," said Barbara Ericson, director of the program, in the statement.

In essence, the IT pros get to team-teach with a business teacher who wants to learn how to be a computing teacher, according to a blog post by Mark Guzdial, a Georgia Tech professor and a researcher in computing education. "Both team teachers want to become computing teachers: One knows IT and wants to learn how to be a teacher, and the other is a teacher who wants to learn IT. The result isn't just 30 new high school CS teachers. It's 60 well-trained teachers," he wrote.

The program's broader goal is to improve high school computer science education over the next three years by increasing the number of classes, improving training and creating highly engaging curricular materials.

Georgia Tech will publish the results of the pilot project and share materials with other states.

– Mitch Betts

Micro Burst

Online social network Facebook has

30,000

servers and 230 staff engineers supporting 300 million users.

SOURCE: DATA CENTER KNOWLEDGE, AMHERST, N.Y.

ONLINE COMMUNITY

Businesses Still Back Social Nets

Despite tight budgets, companies are continuing to support the social networking activities they've recently established. In a Deloitte LLP survey of 400 companies, 94% of the respondents said that they plan to maintain or increase their investments in social media tools and online communities, while only 6% said they plan to decrease such investments.

Businesses use metrics such as the number of active users and how many people post or comment to gauge the success of their social networking efforts. But Deloitte said they should consider other measures, too, such as increases in search engine rankings and referral links on other Web sites.

The study found that as social media efforts mature, companies are turning their attention to "lurkers" – people who observe a community but don't participate. Twenty percent of the respondents said that their companies have set up formal "ambassador" programs, which give lurkers special treatment to encourage them to become more active.

– MITCH BETTS

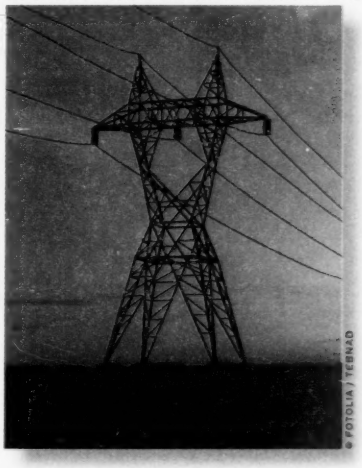
FUTURE WATCH

These bees don't sting: A team of computer scientists, engineers and biologists at Harvard University received a $10 million National Science Foundation grant to fund the development of small, mobile robotic devices dubbed RoboBees. Inspired by the biology of a bee and the insect's hive behavior, the researchers hope that their work on the RoboBees will lead to advances in the design of miniature robots, compact high-energy power sources, and smart sensors akin to bees' eyes and antennae. The researchers also plan to develop software and communications methods for coordinating a colony of RoboBees, simulating the way real bees rely upon one another to scout, forage and plan.

SOURCES: HARVARD UNIVERSITY AND THE NATIONAL SCIENCE FOUNDATION

LETTER FROM AFRICA

Blackouts Hurt Africa's Tech Progress



© FOTOLIA / TEBNAD

Power outages, caused in part by receding water in hydroelectric dams, are threatening to derail Africa's technological progress.

South Africa, Namibia, Angola, Zambia, Kenya, Uganda, Tanzania, Nigeria, Ghana and countries within the Sahara desert all suffer from power shortages because demand outstrips supply.

In South Africa, last year's power rationing program, called "load shedding," raised serious concerns as data centers, business process outsourcing facilities and other technology installations suffered from hours of downtime.

This year, Kenya, Uganda and Tanzania have introduced electricity rationing that results in industrial areas losing power intermittently for a day or a few hours at a time and residential areas losing power for up to three days in a week.

"The situation in Kenya is very ironic. I have a friend [offering technical services locally and abroad] who shifted his offices from Nairobi city center to one of the residential areas; now he is experiencing blackouts for three days in a week," said Tony Ng'eno, managing director of WinAfrique Technologies Ltd. in Nairobi.

Power problems increase costs for IT providers and users alike by requiring additional sources of power such as generators, said Dobek Pater, a telecommunications analyst at Africa Analysis, in South Africa.

Officials are trying to persuade international companies to set up data centers in the region, yet those facilities require ample power for servers and cooling systems. "Generators can be used, but only for smaller data centers. This means that the development of large data centers is unlikely to take place," added Pater, via e-mail.

Ghana has had power shortages since 2006 "due to a light rainy season that led to an extremely low water level at the Akosomboa Dam, Ghana's main source of electricity," said Yaw Owusu, managing director of Gateway Innovations Ltd., an IT and outsourcing services provider in Africa.

Owusu said the government of Ghana has embarked on an ambitious project to build more power stations – in partnership with the private sector – and hopes to export power to the West Africa region by 2012.

– *REBECCA WANJIKU, COMPUTERWORLD KENYA*

AVAILABLE, EVEN WHEN YOU'RE NOT.

Our Integrated Management Module provides automated, proactive, intelligent management of your IBM servers to keep them running.

IBM express advantage™

IBM® SYSTEM x3650 M2 EXPRESS $2,029

PN: 7947E1U

Featuring up to 2 Intel® Xeon® processor 5500 series

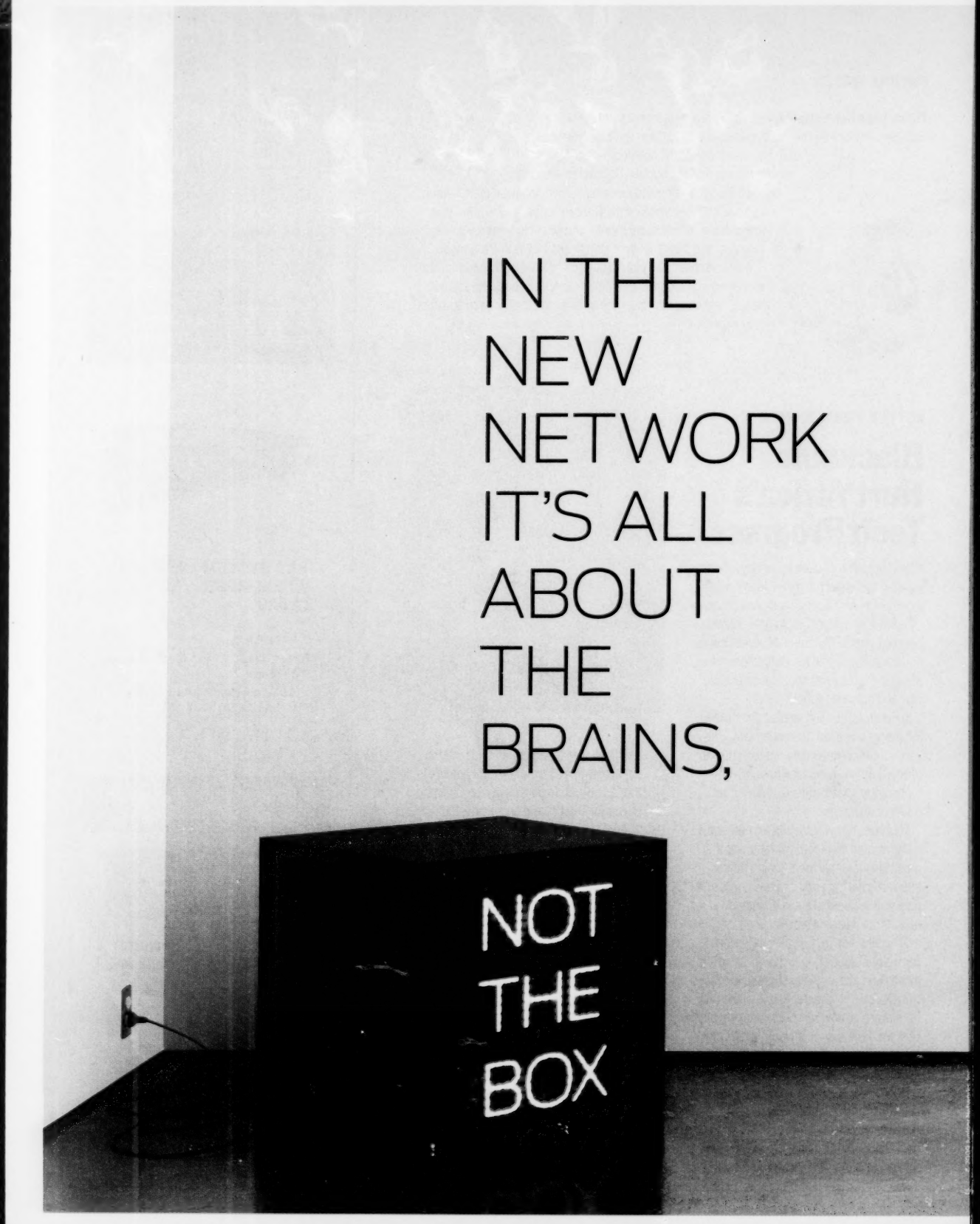
16 DIMM sockets 1333 MHz DDR-3 RDIMMs (128 GB max)

ibm.com/systems/available
866-872-3902 (mention 6N8AH21A)

IBM, the IBM logo, IBM Express Advantage, System Storage and System x are registered trademarks or trademarks of International Business Machines Corporation in the United States and/or other countries. For a complete list of IBM trademarks, see www.ibm.com/legal/copytrade.shtml. Intel, the Intel logo, Xeon and Xeon Inside are trademarks of Intel Corporation in the U.S. and other countries. All other products may be trademarks or registered trademarks of their respective companies. All prices and savings estimates are subject to change without notice, may vary according to configuration, are based upon IBM's estimated retail selling prices as of 7/1/09 and may not include storage, hard drive, operating system or other features. Reseller prices and savings to end users may vary. Products are subject to availability. This document was developed for offerings in the United States. IBM may not offer the products, features, or services discussed in this document in other countries. Prices are subject to change without notice. Starting price may not include a hard drive, operating system or other features. Contact your IBM representative or IBM Business Partner for the most current pricing in your geographic area. © 2009 IBM Corporation. All rights reserved.

intel Xeon inside

Powerful. Intelligent.


IN THE
NEW
NETWORK
IT'S ALL
ABOUT
THE
BRAINS,
NOT
THE
BOX

The challenges raised by the massive increase in networked devices and their escalating bandwidth demands will not be solved by more hardware, but by a radical rethink in the way networks work.

It calls for a whole new philosophy and that's where Junos™ comes in.

A revolutionary combination of software, silicon and systems architecture. It's how to make the box smarter. And it's only from Juniper Networks.

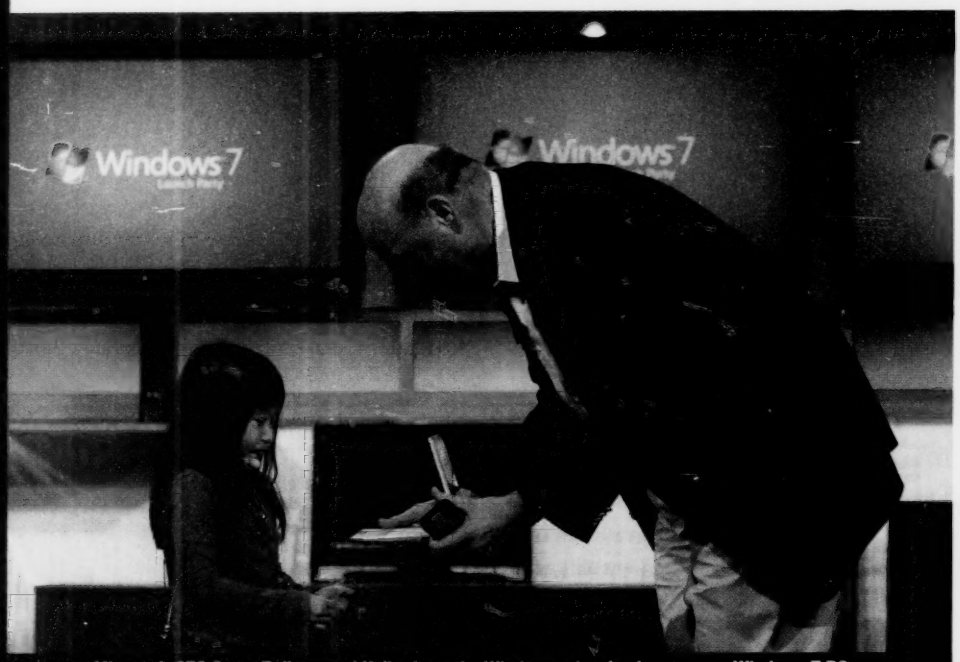
Junos is more than an operating system. It's the open-standards, integrated and familial approach to network design at the heart of Juniper routers, switches and security devices. It's a game changer because it brings stability to an environment that has been rife with interoperability issues. Because it creates a platform for third-party innovation and development, and because, in concert with the Junos One family of processors, it enables a new network architecture that is simpler and more powerful than anything before it.

The result is open, interoperable software-powered networking that is scalable, secure and automated.

The new network is here.
And it's running Junos.

JUNIPER.
NETWORKS

TheNewNetworkIsHere.com



Microsoft CEO Steve Ballmer and Kylie, from the Windows ads, check out a new Windows 7 PC at the launch event held in New York last week.

Microsoft's OS Future Rides on Windows 7

Early users see promise in the energy-saving features and boot-up times of troubled Vista's successor. By Gregg Keizer and Patrick Thibodeau

MICROSOFT Corp.'s standing as an operating system developer is on the line with the launch of Windows 7, according to analysts and other experts.

Late last month, the company formally unveiled its next-generation operating system — the first new Windows release since cofounder and longtime CEO Bill Gates departed in 2008.

"There's a reputation issue at stake here," said Michael Silver, an analyst at Gartner Inc. "Apple has been making fun of them, and Microsoft wants to put an end to that."

Preston Gralla, a *Computerworld* contributing editor who has extensively reviewed Windows 7, said that in following the roundly criticized Windows Vista operating system, "Windows 7 will show if [Microsoft] can do operating systems right, or if they've finally lost it."

Microsoft finds itself vulnerable because of its continuing failure to persuade users to upgrade from Windows XP to Vista since the latter's release three years ago.

The older Windows XP is still used by 72% of computer users worldwide, while just 19% are running Vista, according to Net Applications in Aliso Viejo, Calif.

Though Microsoft last week acknowledged that "isolated issues" caused endless reboots among some users trying to upgrade from Vista to Windows 7, initial data from early corporate adopters of Windows 7 indicates that the new operating system can cut power costs while saving its users significant time by booting up more quickly.

The group policy controls in Windows 7 are already helping IT personnel at Pella Corp. better manage power use, said Jim Thomas, director of IT operations at the Des Moines-based maker of windows and doors, which has distributed Windows 7 to 200 of its 4,000 users. Users can temporarily reset power management controls, "but every time the group policy reapplies, it puts the power setting down that we want to apply," he said.

Thomas conservatively estimated that using Windows 7 will result in about $20,000 in annual power savings once the software is fully deployed in 2011.

At Automatic Data Processing Inc. in Roseland, N.J., about 300 of the 30,000 users are running the new operating system, said CIO Mike Capone. He said he has seen estimates that the power management capabilities could deliver savings "into the six-figure range" annually once ADP completes its full rollout, which it expects to do within 36 months.

Randy Benz, CIO at St. Louis-based Energizer Holdings Inc., said that a Windows 7 pilot among 40 users found that the operating system boots up some 80% faster than XP, which can take up to five minutes.

Roger Kay, an analyst at Endpoint Technologies Associates Inc. in Wayland, Mass., noted that "Microsoft in this case wanted to underpromise and overdeliver, which is the opposite of what it did with Vista." ■

Freelance writer **Linda Rosencrance** *and* **Marc Ferranti** *of the IDG News service contributed to this story.*

9 MILLION CUSTOMERS HAVE VOTED.

THANKS

FOR MAKING US THE WORLD'S #1 WEB HOST!

Your loyalty has helped make us the leading web hosting provider worldwide. 1&1 was built on a foundation of innovative products and outstanding reliability, and we continue to strive to bring you high-quality products at affordable prices. To show our appreciation, we're offering discounts on our most popular products.

DOMAINS

	1&1	Yahoo!	Go Daddy
.com	$8.99	$9.95	$10.69
Private Domain Registration	FREE	$9.00	$8.99
ICANN Fee	Included	Included	$0.18
E-mail Account	FREE 2 GB Mailbox	NO Mailbox Included	FREE 1 GB Mailbox
Total Annual Cost	~~$8.99~~ $6.99 first year*	$18.95	$19.86

BUSINESS WEBSITES

Powerful website solutions for your small business.

1&1® Business Package

- 3 FREE Domain Names
- 250 GB Web Space
- UNLIMITED Traffic

~~$9.99~~ per month

3 months FREE!*

More special offers are available online. For details, visit www.1and1.com

*Offers begin November 1, 2009. "3 Months Free" offer valid with a 12 month minimum contract term only. Setup fee and other terms and conditions may apply. Visit www.1and1.com for full promotional offer details. Program and pricing specifications and availability subject to change without notice. 1&1 and the 1&1 logo are trademarks of 1&1 Internet AG, all other trademarks are the property of their respective owners. © 2009 1&1 Internet, Inc. All rights reserved.

MEMBER OF united internet

Call 1-877-GO-1AND1

Visit us now www.1and1.com

1&1®

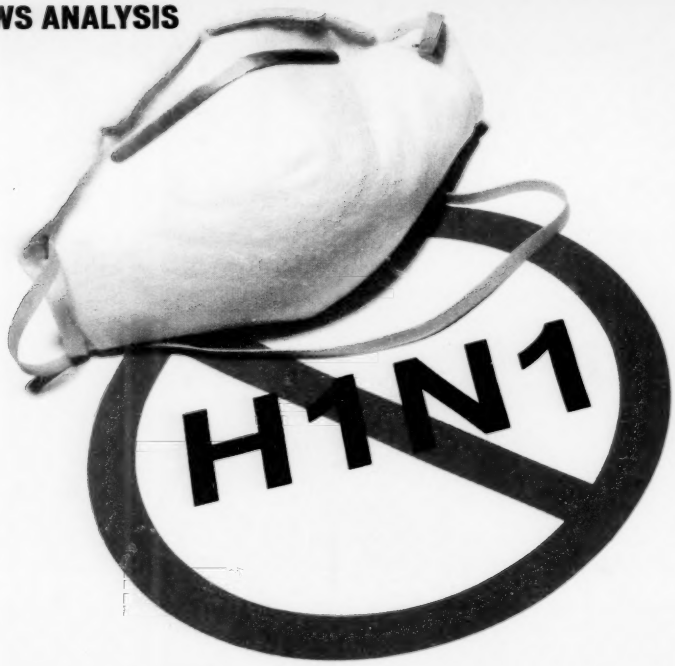


PHOTO BY FOTOLIA

Swine Flu Emergency Should Put IT on Alert

Many companies likely aren't prepared to function if large numbers of employees are infected. By Lucas Mearian

THOUGH the H1N1 flu has been declared a national emergency by President Barack Obama, experts say that many companies remain ill-prepared for its potential consequences, which could include employee absentee rates of 40% or more.

While last month's emergency declaration is targeted mostly at helping health care providers and government agencies bypass regulatory requirements to provide critical care, experts say it should also be a red flag for the IT and business communities.

"Organizations probably have not allocated enough resources for virtual private networks nor tested VPNs for the fact that 80% of their staff could be working from home," said Al Berman, executive director of DRI International, a training institute that focuses on helping businesses prepare for emergencies. "We ran some tests with companies, and they ran out of TCP/IP addresses in five minutes."

Berman said that many businesses are probably delaying VPN upgrades because of increasing bandwidth costs. For example, he said, DRI recently met with officials of a large insurance provider and found that it would cost the company $1 million to boost bandwidth enough to support 40% of its staff working from home.

The federal government's Flu.gov Web site, managed by the U.S. Department of Health and Human Services, offers guidance to businesses about what to do in the event of a pandemic. Its suggestions range from making sure sick employees stay home to appointing a pandemic coordinator or team to oversee the preparation and implementation of a disaster plan.

Employers should "send a very strong message to employees to stay home if they're sick. No one is that essential," said Kim Elliott, deputy director of Trust for America's Health, a public health advocacy group. "You don't want employees coming in and infecting others to the point where your business shuts down."

The pandemic coordinator or team should monitor employees to ensure that they follow basic rules of hygiene, such as washing their hands, and make sure that face masks are available, according to the Flu.gov Web site.

Elliott said that the planning process should also include an assessment of how the absence of a large number of employees would affect operations, with recommendations on how to keep things running under such circumstances.

"That may mean cross-training employees in some key business functions," Elliott said, citing IT infrastructure maintenance, bookkeeping and accounting duties, and some customer-facing activities.

Businesses should also develop a plan to communicate with municipal agencies, which determine whether bus routes, schools or even businesses need to be shut down, Berman said.

The national emergency declaration came after a weekly U.S. Centers for Disease Control and Prevention report called FluView noted that 43 states are now reporting widespread influenza activity and that H1N1 has caused 1,000 deaths in the U.S.

The World Health Organization had declared the H1N1 flu outbreak a pandemic in June, elevating its health emergency alert status to Phase 6 — its highest level. At that time, the number of influenza cases was close to 30,000 worldwide. The WHO now says there are 414,000 confirmed cases of H1N1 and that there have been nearly 5,000 H1N1-related deaths. ■

Almost $90 million in server room research. Now yours is FREE!

Implementing Energy Efficient Data Centers
An Improved Architecture for High-Efficiency, High-Density Data Centers
The Advantages of Row and Rack-Oriented Cooling Architectures for Data Centers
Deploying High-Density Zones in a Low-Density Data Center
Power and Cooling Capacity Management for Data Centers
White Paper #150
APC

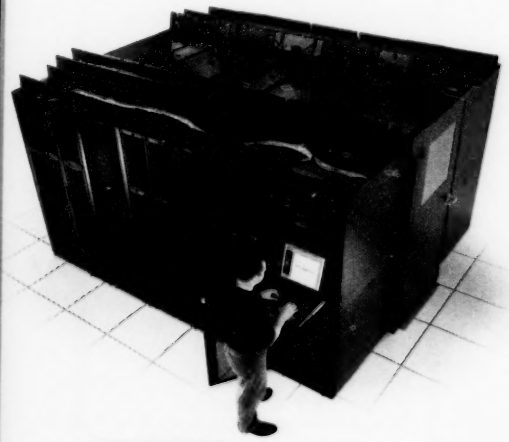
"Implementing Energy Efficient Data Centers"
White Paper #114
~~$65.00~~ FREE!

"An Improved Architecture for High-Efficiency, High-Density Data Centers"
White Paper #126
~~$120.00~~ FREE!

"The Advantages of Row and Rack-Oriented Cooling Architectures for Data Centers"
White Paper #130
~~$85.00~~ FREE!

"Deploying High-Density Zones in a Low-Density Data Center"
White Paper #134
~~$115.00~~ FREE!

"Power and Cooling Capacity Management for Data Centers"
White Paper #150
~~$225.00~~ FREE!



Download FREE APC White Papers to avoid the most common mistakes in planning IT power and cooling.

Have a plan for your data center.

We talked to thousands of customers from Baltimore to Beijing and saw the good, the bad, and the ugly measures customers took in their data center planning. In many cases, turnover and budget cuts resulted in no plan at all.

Get the answers you need and avoid headaches tomorrow.

Do you and your staff know the top ten planning mistakes to avoid? The easiest way to improve cooling without spending a dime? Find these answers and more in our latest selection of white papers. Take advantage of our valuable research today and save yourself money and headaches tomorrow.

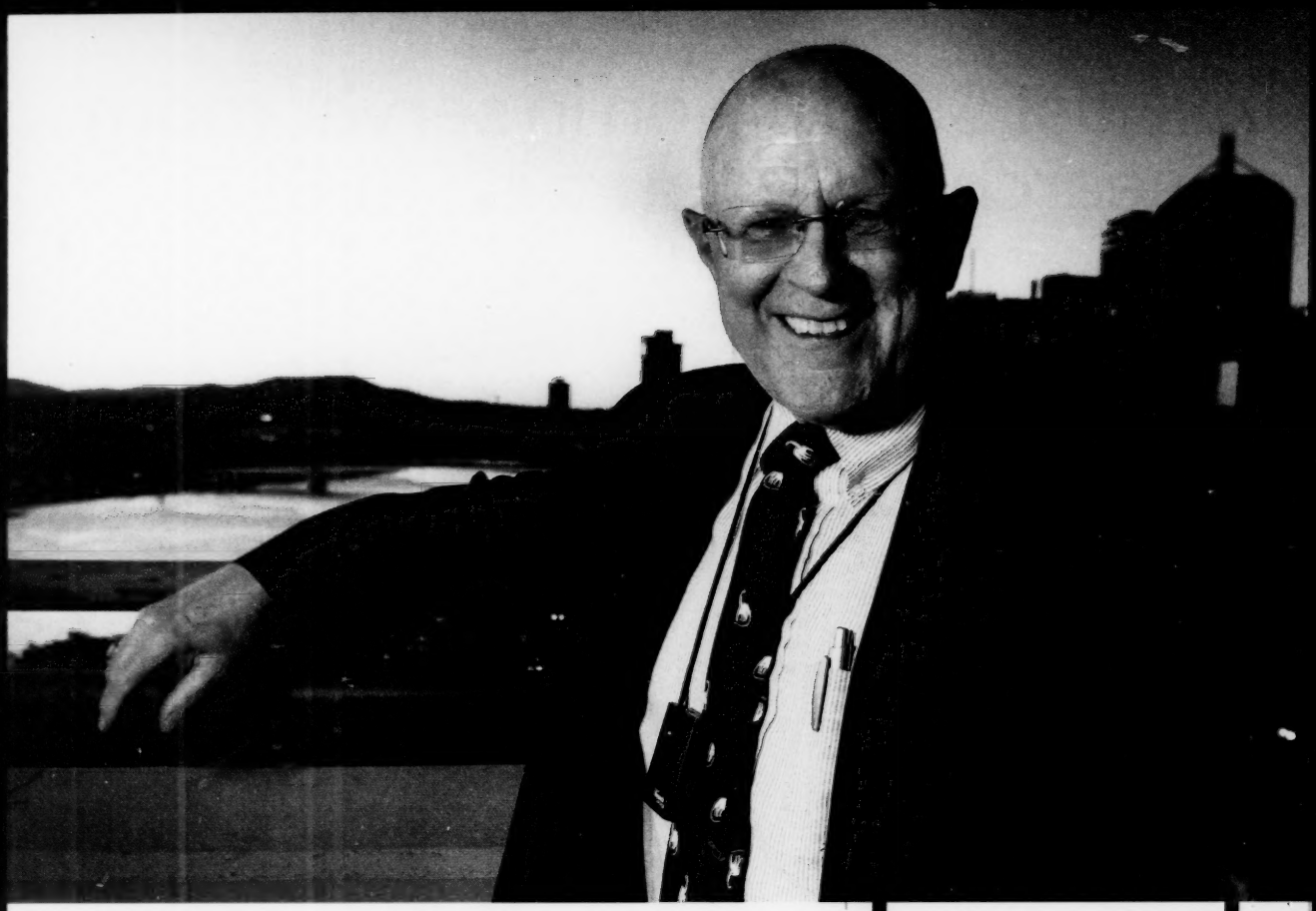
If you would like more information about APC's availability solutions, visit us online at *www.apc.com*

Time well spent... Choose and download any three white papers within the next 90 days for **FREE!**

Visit www.apc.com/promo **Key Code** m683w • **Call** 888-289-APCC x6101 • **Fax** 401-788-2797

APC by Schneider Electric

©2009 Schneider Electric, All Rights Reserved. Schneider Electric and APC are owned by Schneider Electric, or its affiliated companies in the United States and other countries.
e-mail: esupport@apc.com • 132 Fairgrounds Road, West Kingston, RI 02892 USA • 998-1764



■ THE GRILL

Gordon Bell

The master researcher wants us to **supplement our memories** by storing bits of our lives **in the cloud.**

One researcher at Microsoft Corp. hopes that someday we'll all be able to easily recall our lives, and not just the major moments like weddings and graduations, but all the little things that fill our days as well.

Gordon Bell, a computer industry pioneer and a principal researcher at Microsoft's research arm, is well into a 10-year archiving project, dubbed MyLifeBits. The 75-year-old IT innovator has been working to supplement his own memories by amassing a database of images, video, e-mails, phone conversations, GPS coordinates and printed documents.

Bell wants to archive vacations, workdays, casual walks, conversations and books he's read — his whole life — and thinks it won't be long before the rest of us do, too. His new book, Total Recall, *co-authored with Jim Gemmell, tracks the project.*

In an interview with Computerworld, *Bell talked about storing all of that sensitive data in the cloud, our social networking self-obsession, whether there's information he wishes he hadn't saved, and what devices will help us collect the bits and pieces of our everyday lives.*

Continued on page 20

Dossier

Name: Gordon Bell

Title: Principal researcher

Organization: Microsoft Research Silicon Valley

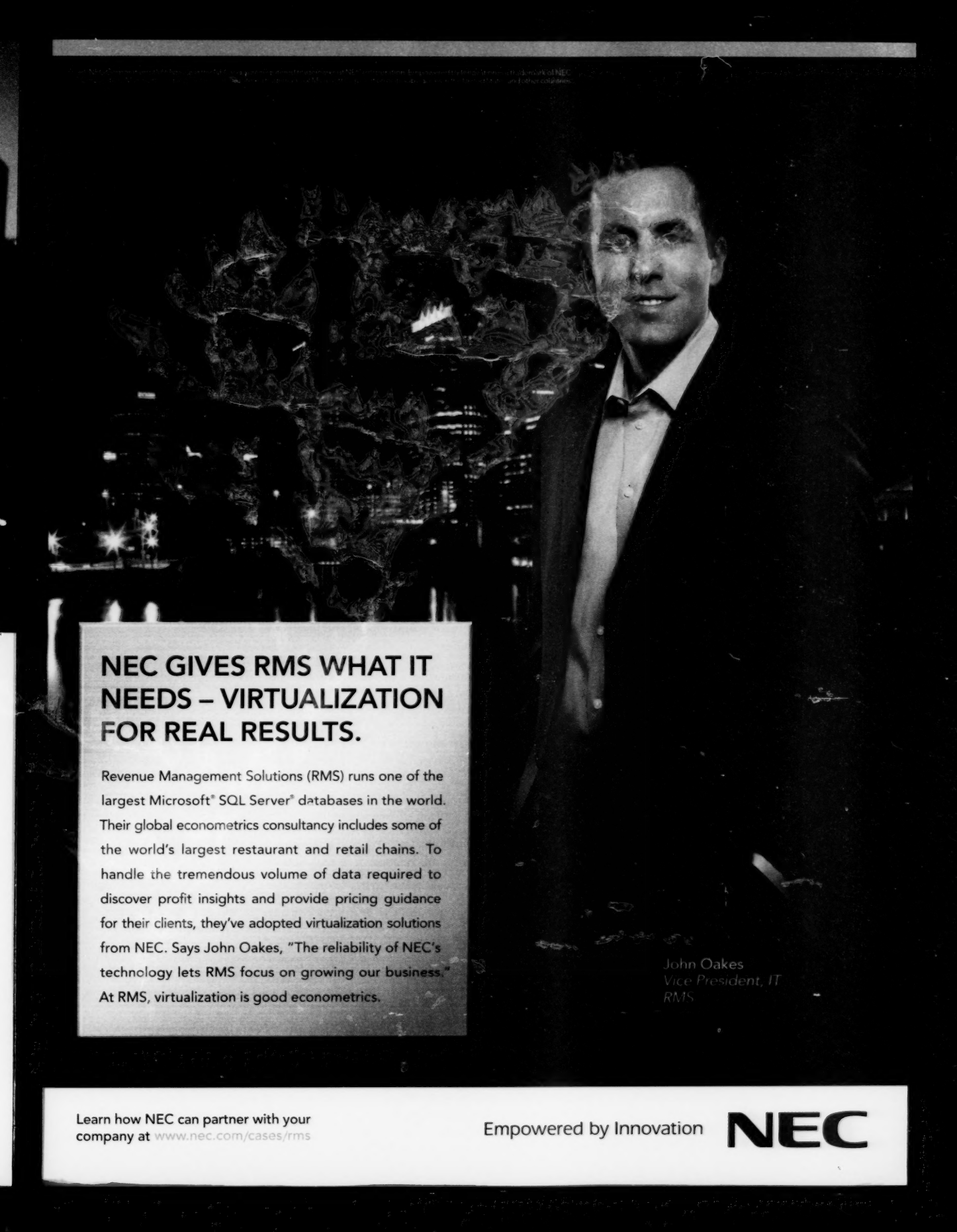
Locations: San Francisco, and Sydney, Australia

Favorite gadget: "It's perhaps the Bodybugg. It's a health monitoring device. It tells you how much energy you're expanding throughout the day. Oh, and the Kindle DX."

Favorite social network: "Actually, I think I prefer much more old-fashioned e-mail. I'm on Facebook, but I don't really use it that much. I've Twittered a few times, but I don't really use it, either."

Guilty pleasure: "A lot of chocolate."

PHOTO COURTESY OF QUEENSLAND UNIVERSITY OF TECHNOLOGY, BRISBANE, AUSTRALIA



NEC GIVES RMS WHAT IT NEEDS – VIRTUALIZATION FOR REAL RESULTS.

Revenue Management Solutions (RMS) runs one of the largest Microsoft® SQL Server® databases in the world. Their global econometrics consultancy includes some of the world's largest restaurant and retail chains. To handle the tremendous volume of data required to discover profit insights and provide pricing guidance for their clients, they've adopted virtualization solutions from NEC. Says John Oakes, "The reliability of NEC's technology lets RMS focus on growing our business." At RMS, virtualization is good econometrics.

John Oakes
Vice President, IT
RMS

Learn how NEC can partner with your company at www.nec.com/cases/rms

Empowered by Innovation **NEC**

"In the spirit of being a collector, it's always a feeling of, 'My God, it's not complete.' I haven't deleted anything. I just don't believe in it.

Continued from page 18

Were you a collector as a kid? How far back does this go for you? I don't think I was really a serious collector. One time I went around the neighborhood and collected all the different manufacturers of razor blades just to see how many there were. Well, that's pretty weird. I've taken about 14 bicycle trips in France, and each one was extensively logged — all the places I stayed. The trip was measured in stars per meal.

What's your ultimate goal with this project? The goal really was to explore the future and put a vision out there that I think we'll all be working toward. You'll have memories that you can pass on from generation to generation, and you pass on as much as you're willing to. There's that aspect of being able to have a kind of immortality.

If you're passing all this information on to another generation, do you weed through all the chaff to give them just the good stuff, or do you give it all to them? I'm willing to give them everything. I think this is where you need a lot of tools to deal with all the information. You have to organize things. As my children go through it, they're not so interested in what I did at work, but they want to recall a trip we all took together. They'll use it for recalling our memories together.

Has there been any information that you look at now and wish you hadn't saved? Never. I really have never had that feeling. It's always the other. I wish I had the whole thing. In the spirit of being a collector, it's always a feeling of, "My God, it's not complete." I haven't deleted anything. I just don't believe in it.

Where will all this information be stored? I'm right in that ambivalent state of, Where is all of this going to reside? Maybe there will be a public archive or a way of having all of your life in the cloud. It's not there for everybody to see, but it's just there as a placeholder for you. It started out that there would be an appliance, and that would be your memory extension. That idea held for a long time. I still think of an appliance, but I'm not sure how much of that will be backed up in the cloud.

Do you think if everything we do, everything we say, everywhere we go is recorded, it will make us censor our own actions? Would you want your kids to know you scalped concert tickets or gossiped about a friend? I don't know about that. I think you kind of forget that it's happening, that it's being recorded.

We're all so self-obsessed these days, posting updates on Facebook and Twitter about the smallest details of our everyday lives. Could this make us even worse? The issue is "lifelogging" as opposed to "lifeblogging." We're not advocates of putting that stuff in a public place. People who believe they need to put all of that stuff out in public and make statements in public, we're very skeptical that you want to do that. I don't think you gain anything by spilling your guts about your actions.

What about privacy and security issues with all of this information sitting out there? We're not introducing anything that isn't already out there. I think it may come down that your electronic memory is not [legally] discoverable. That's my private memory, and you can't make me disclose it.

If you plan on storing this on the cloud, doesn't that raise even more security issues? I don't think it's any [less secure]. I think cloud security will be dealt with. The overall security will be improved. Every six months, you see that someone's PC has been stolen or moved and another million passwords or credit cards have been stolen. Frankly, I think [cloud security] will be better than what we have today, where it's physically so distributed.

In five, 10 or 20 years, what devices will we have to help us record all these different aspects of our lives? I think virtually a record of your life will be carried in your pocket. Certainly in 20 years, cell phones will have a pretty good memory of what's going on in your life. With the changes in storage, GPS, and cameras and audio and video, they're important collectors. And then we'll have the storage to save everything, whether it's in the cloud or on your home server.

— *Interview by* **Sharon Gaudin**

verizon wireless

My in-store business specialist helped me stay connected to clients, track my workforce and order a new mower on the go.

That's cutting edge.

Only Verizon Wireless has small business specialists in every store, ready to work with you to customize solutions that best fit your business needs. All while providing wireless service with five times more 3G coverage than AT&T. Come in today and see the wireless solutions we have in store for your small business.

Buy one BlackBerry® at our lowest prices ever and get another

FREE Free BlackBerry Smartphone of equal or lesser value. New 2-yr. activation on voice plan with email feature or email plan req'd per phone.

BlackBerry® Tour™

$149.99

$249.99 2-yr. price - $100 mail-in rebate debit card.

Call 1.800.VZW.4BIZ **Click verizonwireless.com/smallbusiness** **Visit your local Verizon Wireless store**

Activation fee/line: $35.
IMPORTANT CONSUMER INFORMATION: Subject to Customer Agmt, Calling Plan and credit approval. Up to $175 early termination fee, and other charges. Comparison based on square miles covered. Offers and coverage, varying by service, not available everywhere. Rebate takes up to 6 weeks & expires in 12 months. Limited time offer. While supplies last. Shipping charges may apply. See verizonwireless.com for details. ©2009 Verizon Wireless.

HP EliteBook and Intel® vPro™ Technology: Rx for Healthcare Mobility

HP, Intel team up to [illegible] for the mobile world

WITH THE SUDDEN INFLUX of new, productivity-enhancing applications, even the most tethered of industries are anxious to go mobile or enhance their current mobile technology. Nowhere is this more evident than in the healthcare industry, which is set to make great strides, thanks to advances such as electronic medical records (EMR) and remote diagnosis applications. However, for IT organizations to fully embrace mobility, they must be assured that the hardware and software supporting these applications are durable, reliable, energy efficient and secure.

HP's EliteBook business notebook portfolio featuring HP Professional Innovations and Intel® vPro™ technology is exactly what the doctor ordered for healthcare and other mobility-seeking environments, according to industry experts. These notebooks have the flexibility, durability, wireless infrastructure and hardware-assisted security and manageability to give IT managers the confidence that users will be able to thrive in this new environment.[1]

"Few things are designed from the inside out to be amazing," says Rob Enderle, principal of The Enderle Group, a consulting firm in San Jose, Calif. "If anyone would have told me a year ago that I would find business-class and professional mobile workstations to be the exceptions, I would have laughed in their face. However, the HP EliteBook Mobile Workstations and the HP business-class workstations are amazing products."

In healthcare, clinicians, physicians, nurses and patients all need immediate access to information, such as EMR, from the point of care. They also need the ability to engage in clear, but secure, communications among themselves. Therefore, they require lightweight, high-performance notebooks with extended battery life and built-in security. With these features, they can provide care from patient bedsides, upload lab results, write prescriptions and orders, access schedules, and review important digital images such as X-rays or MRIs without worrying about recharging, privacy breaches and other common obstacles.[1]

Durability

Hospitals, doctors' offices and other healthcare locations can be hard on mobile devices. HP EliteBooks, with some weighing in at less than 5 pounds, have a DuraCase magnesium design that is business-rugged. Some Elitebooks are equipped with a 4-point lockdown mechanism that allows the notebook to stay aligned even if it sustains a fall.[2] In addition, the machines are protected from common keyboard mishaps thanks to a thin layer of Mylar film that minimizes the risk to sensitive, critical components, and HP DuraKeys, which makes the keys 50 times more resistant to wear and tear.

A final feature of the HP EliteBook that protects it from damage is the HP 3D DriveGuard, which physically secures the drive if the machine is dropped. HP 3D DriveGuard is an accelerometer on the drive that parks the heads of the hard drive to protect data during impact.

More Power

In addition to durability, users in healthcare environments also need assurance that they can get through a shift, even while using resource-intensive applications, without having to stop and recharge their notebooks.

HP EliteBook notebooks are energy efficient and have extended battery life. They meet the U.S. government's Energy Star program requirements as well as the Electronic Product Environmental Assessment Tool (EPEAT). Extremely durable solid state drives from Intel, which generate less heat and noise and consume 50% less power than standard hard drives, and default power settings help extend runtime. By combining the solid state drives, energy-efficient Intel® Core™2 Duo processors,[3] power management, a state-of-the-art LED display and HP's Ultra Capacity Battery, users can achieve up to 24 hours on a properly

1. Wireless access point and Internet service required. Availability of public wireless access points limited.

2. Test results are not a guarantee of future performance under these test conditions.

configured 6930p with Ultra Capacity Battery.[4]

Studies have shown that by upgrading from 4-year-old desktop PCs to notebooks with integrated Intel vPro technology, healthcare organizations can reduce energy consumption significantly.

Quick and Secure

While pulling up records from a patient's bedside seems like nirvana compared with older days, it could quickly become frustrating without enhanced speed and security.

HP Professional Innovations also helps ensure that users function in a secure environment without the constant need for IT intervention. For instance, with Spare Key, if users lose or forget their password, they can still access data if they can answer several predetermined questions. This avoids disruption in patient care as users wait for IT to reset their passwords. They also can use Credential Manager for HP ProtectTools to facilitate safe, single sign-on and guard against unauthorized notebook access.

To assure compliance in safeguarding sensitive information, IT can erase a notebook that is ready to be decommissioned or reassigned using HP Disk Sanitizer, and users can manage their own file deletion using File Sanitizer.[5] Also, with Intel vPro technology,[6] each machine has added protection against viruses and attacks with programmable defense filters.[7,8] IT organizations can rely on Intel vPro technology to help ensure enhanced security with faster patch saturation and perform faster, more accurate asset inventories.

With Intel vPro technology, remote configuration, diagnosis, isolation and repair of infected PCs are easier as well, even if the PCs are outside of the corporate firewalls. This reduces the need for IT to travel to physicians' offices or other off-site locations within the healthcare organization. Finally, to assist with patient privacy, the HP EliteBook has display filters that prevent others from seeing their screens from an angle.

Even though they are easily one of the most demanding environments, healthcare organizations can achieve highly productive mobility with HP EliteBook notebooks. With the superior benefits of HP Professional Innovations and Intel vPro technology built in, the HP EliteBook is an outstanding choice for flexibility, durability, reliability, wireless connectivity, security and manageability.

Produced by Computerworld Custom Publishing and proudly sponsored by:

www.hp.com www.intel.com

To find out how HP can help your hospital run more efficiently, call 1-866-273-8797.

Sandra Gittlen *is a Massachusetts-based technology writer and former senior editor at* Network World.

3. 64-bit computing on Intel architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. See www.intel.com/info/em64t for more information. Dual Core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology.

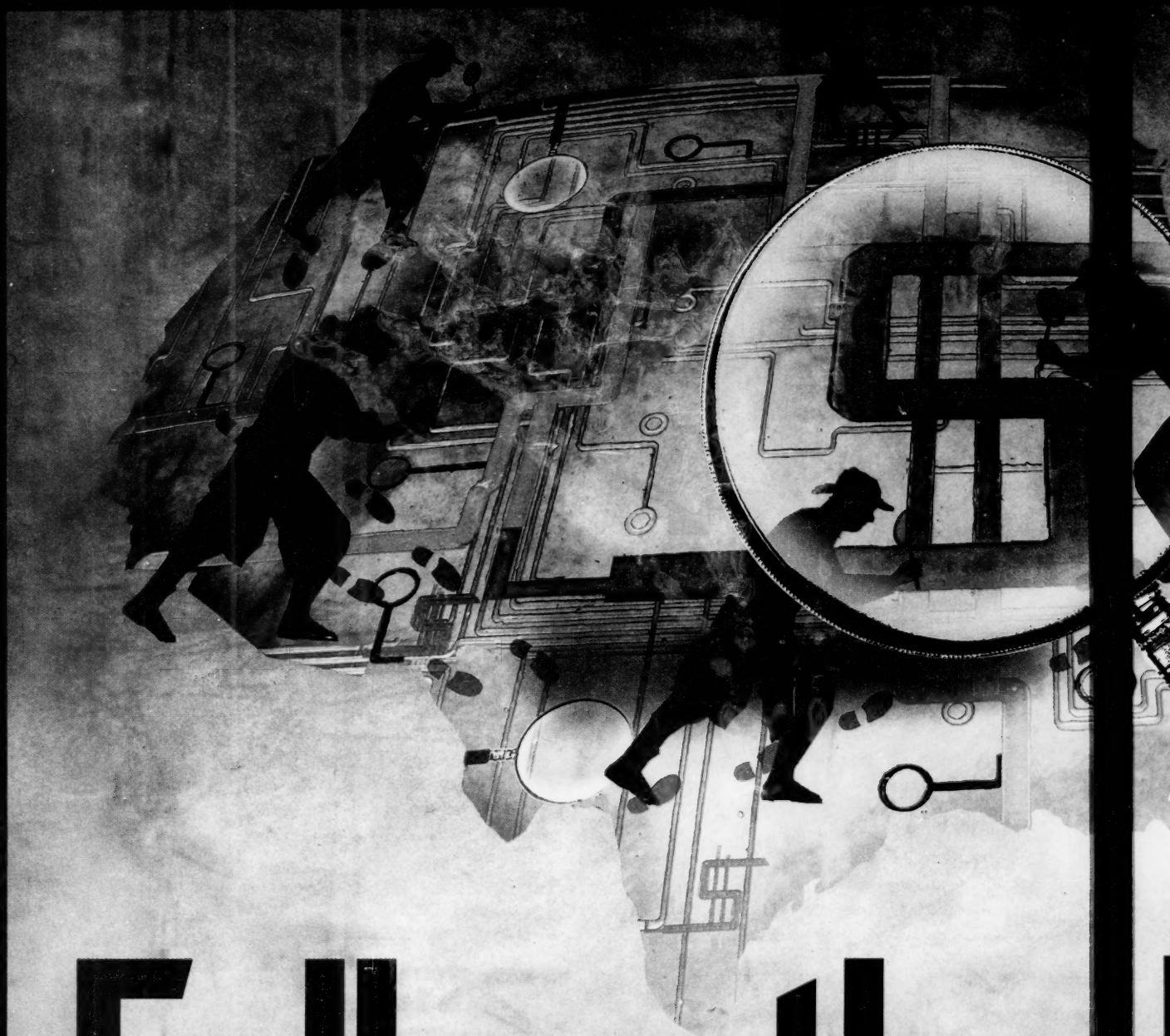
4. Up to 24 hours requires separately purchased Ultra Capacity Battery and customer download of the latest Intel graphics driver and HP BIOS. Notebook must be configured with optional Intel 80GB SSD drive and HP Illumi-lite LED display and requires XP operating system. Battery life will vary depending on the product: model, configuration, loaded applications, features, and power management settings. The maximum capacity of the battery will decrease with time and usage.

5. For the use cases outlined in the DOD 5220.22-M Supplement.

6. Some functionality of this technology, such as Intel Active management technology and Intel Virtualization technology, requires additional third-party software in order to run. Availability of future "virtual appliances" applications for Intel vPro technology is dependent on third-party software providers. Compatibility with future "virtual appliances" and Microsoft operating system is yet to be determined.

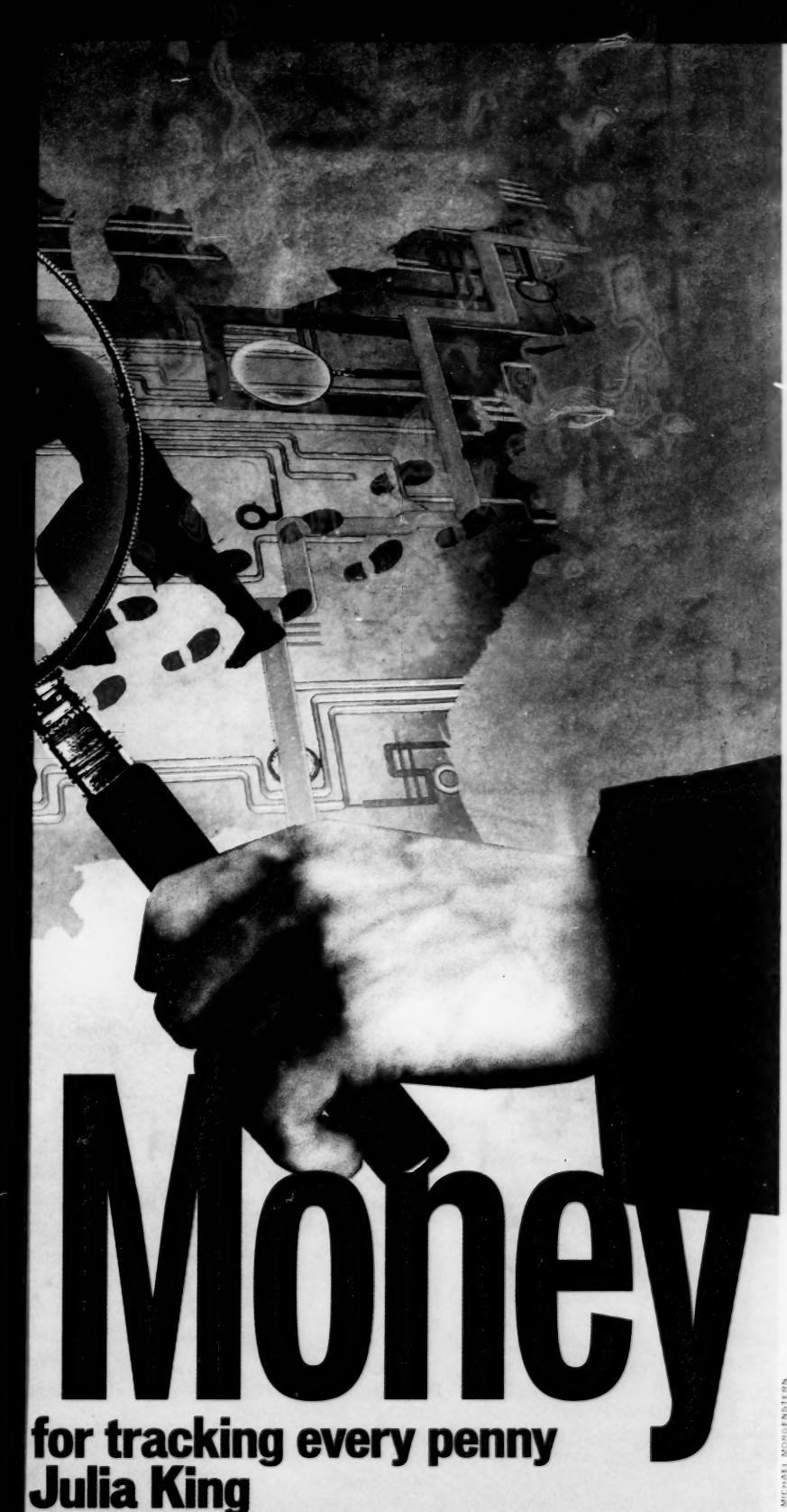
7. Intel® vPro technology includes Intel Active Management Technology (Intel AMT). This technology requires the computer system to have an Intel® AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes. With regard to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating or powered off. For more information, see www.intel.com/vpro.

8. The Intel Execute Disable Bit feature combined with Microsoft Windows XP Service Pack 2 provides additional protection against buffer overflow viruses similar to MSBlaster, Slammer and SoBig! Execute Disable Bit (XD) is only enabled by certain operating systems including the current versions of Microsoft® Windows®, Linux and BSD Unix. Protection of the OS or applications may not be enabled by default. After properly installing the appropriate operating system release, users must enable the protection of their applications and associated files from buffer overrun attacks. Consult your OS documentation for information on enabling XD. Contact your application software vendor for information regarding use of the application in conjunction with XD. It is strongly recommended that users continue to use third-party anti-virus software as part of their security strategy.



Follow the

State IT shops are scrambling to meet federal rules of the $787 billion economic stimulus package. By



Money

for tracking every penny

Julia King

THERE'S no such thing as a free lunch, especially for IT.

Go to the state of Iowa's Web site, and you can see that of the $2.5 billion in federal economic stimulus money earmarked for the state under the American Recovery and Reinvestment Act of 2009 (ARRA), $553 million has already been spent on health, education, infrastructure and other programs designed to create jobs and jump-start the local economy.

Drill a bit deeper into the data and you can pull up the exact amounts spent on weatherization training and technical programs, rental assistance programs and hundreds of other individual projects.

"One of the biggest challenges is just the speed at which we had to get things done.
JOHN GILLESPIE, CIO, STATE OF IOWA

Iowa CIO John Gillespie figures his IT organization has devoted about 800 man-hours so far to making that data available to the state's citizenry. "We actually had to build the application to give [different state agencies and programs] a way to submit data to us," he says.

But the far bigger challenge, Gillespie says, has been building the business rules and defining internal processes to comply with federal reporting requirements, which have changed or been updated several times since the stimulus package was first announced in February. States are required to file quarterly reports that fully account for every tax dollar spent.

Just as the $787 billion ARRA is unprecedented, so are the reporting demands it's making on state CIOs and IT organizations, which are scrambling to whip up new processes and tools to accurately track and account for their

MICHAEL MORGENSTERN

states' shares of the stimulus pie. The process has been complicated by a variety of factors, including exceedingly tight deadlines and complex and changing federal reporting guidelines.

Another big problem is the lack of a central accounting system in most states, which have had to first devise ways of extracting and aggregating data from multiple systems across hundreds of agencies before rolling it up to report it to the federal government.

Like so many of the energy and construction projects launched with stimulus dollars, tracking and reporting systems remain works in progress.

In Missouri, one of a handful of states to have a central accounting system used across all state agencies, funding and budgeting data is relatively easy to access. What remains difficult to grasp, however, is precisely what the federal government wants to know, says CIO Bill Bryan.

Two data points the feds want to track are job creation and retention under the economic stimulus program. "But the definition and requirements for how to count jobs is quite a challenge to understand," according to Marilyn Gerard-Hartman, director of enterprise applications for Missouri. For example, if the state awards a highway infrastructure project to a contractor who in turn hires a subcontractor, who in turn hires other subcontractors, "how far down the chain is the state responsible for tracking? And do you only count it as a job created if the job wouldn't have existed without the ARRA funding?"

Generally, "it hasn't been clear what the requirements are until fairly late in the game," adds Bryan.

Meanwhile, fulfilling the requirements to the letter of the federal law is critical, Bryan notes. "If you don't comply, you could get thrown under the bus and not get any further funding."

"One of the biggest challenges is just the speed at which we had to get things done," says Iowa's Gillespie. "The rules for the most part didn't get finalized literally until weeks — not months — ago. Just keeping up has been the biggest challenge."

Rather than licensing commercial stimulus-tracking tools, Gillespie's team internally developed a tracking and reporting system "using tools already familiar to financial folks who have all the data in Excel spreadsheets," he explains. The data is imported into a database, where it is aggregated, extracted and converted to an XML-formatted report and submitted online to the federal government.

The Best Trackers
States with the best ARRA-tracking Web sites, as of July:
1 Maryland
2 Colorado
3 Washington
4 West Virginia
5 New York
6 Pennsylvania
SOURCE: STUDY BY GOOD JOBS FIRST, WASHINGTON, JULY 2009

FIRST THINGS FIRST

But before IT could build the tracking system, "we actually had to build a Web-based application to give people a way to submit data to us," Gillespie explains. All of this was done in a matter of weeks by a small team comprising a designer-architect, a programmer and a project manager who is the chief liaison between IT and the state's stimulus office. The team already had some experience from working on the state's recovery Web site, which Gillespie says has "been kind of an iterative process that has been going on since the first recovery money came out."

He chalks up the speedy rate of progress on both projects to what which Fletcher says has made all the difference.

Four years ago, all IT services – which were previously located in individual agencies – were brought under a single statewide organization with one CIO. "Now we partner with the agencies to provide IT services," Fletcher says. "We have a single accounting system, a single IT organization, and we understand what the agencies' businesses are. It has helped us a lot to turn on a dime."

Earlier this year, Utah rolled out a state transparency Web site that includes every single transaction made by the state.

"You can search it, download it to a spreadsheet, sort it in different ways – by account code, by organization and by individual," Fletcher says.

Rather than buying and implementing a separate software package for ARRA reporting and creating a separate ARRA Web site, Fletcher's team flagged ARRA-related expenditures in the state's existing central accounting system so they could be tracked and reported out as a separate entity on the state's original Web site.

"We decided not to really go huge on a [separate ARRA] Web site, but basically to transfer information and integrate it [on the state Web site] so it will be visually useful as well as functionally compliant," Fletcher explains.

There's still one hole: Under a federal requirement, the states also must report ARRA spending of "sub-recipients," like school districts and health care organizations, even when those sub-recipients received the money directly from the federal government.

"One of the problems with the way [some] funding is done is we have no clue about it, because the money doesn't go through the state. But we are still required to report on it," Fletcher says. "Any money that goes into the state has to be reported to the state, even though we have no [direct] knowledge of it."

So, how is the state coping with this requirement? "We have to coordinate with all of those entities the best we can," Fletcher says. "We have to reach out for reporting, and that remains a challenge."

– JULIA KING

Utah Adopts 'Less Is More' ARRA Strategy

Presented with the reporting requirements of the economic stimulus program, Utah CIO Steve Fletcher recalls asking himself, "Do we really want to invest in a lot of gee-whiz software to do this?"

The answer was, and remains, a resounding no.

Instead, Fletcher and other Utah officials decided to build on a statewide spending transparency program and Web site already under development. That program, like the state's American Recovery and Reinvestment Act tracking and reporting tools, capitalizes on a centralized accounting system overseen by a centralized IT organization,

ARRA Stimulus Reporting: The Basics

More than two-dozen federal agencies have been allocated a portion of the $787 billion in stimulus money. Each federal agency develops specific plans for its share, then awards grants and contracts to state governments or, in some cases, directly to schools, hospitals, contractors or other organizations. The federal agencies are required to file weekly financial reports on how they're spending the money and their specific activities involving ARRA funds.

Last month, states and other grant recipients for the first time filed the quarterly spending reports required under the law.

The executive branch has worked hard to ensure a smooth reporting operation, according to Rob Nabors, director of the federal Office of Management and Budget.

As Nabors puts it: "Between OMB and the vice president's office and others in the White House and out in the agencies, we've done 169 different conference calls with recipients. There've been 170 events with state officials. We've had 37 different events with local government officials. There have been seven White House forums, and there've been 20 separate Recovery Act reporting training sessions. That by itself is an unprecedented effort by the federal government to make sure that we get it right, and this was something that started all the way back in February."

– JULIA KING

he describes as healthy competition among states to have good reporting and great Web sites. "We wanted to be better than everybody else," he says.

But given the fierce push to quickly distribute ARRA funds and get new projects up and running, traditional IT project management practices, such as having a comprehensive set of user requirements, have in some cases gone out the window.

In Missouri, for example, a team was in the midst of implementing Microsoft Corp.'s Stimulus360 software for tracking funding and projects when the feds issued a change in data models for reporting.

"We had to move forward with plans and put things in place even though you knew [more] changes were coming," says Gerard-Hartman.

LIKE A START-UP

At the newly formed Massachusetts Recovery and Reinvestment Office, Deputy Director Ramesh Advani likens the fast pace and deadline-driven atmosphere and culture to the environment of a start-up company.

"When you're doing something for the first time, you deal with systems issues, people issues, deadline issues, and you come across something new every day," he says. Tracking and reporting how many jobs are created with ARRA funds is a prime example. Meeting the first federal reporting deadline of Oct. 10 required some on-the-fly tactics.

"For the first round of reporting, what we have done is develop some manual templates, which we issued out to state agencies. Each agency must use the same template and also pass it on to subrecipients and vendors. That data will then be gathered and uploaded into a recently launched central database, then uploaded through XML to the federal system," he explains.

But this is only for the first round of reporting, Advani emphasizes. For the long term, the state is developing an automated data-gathering and -analysis system that includes Oracle Corp. business intelligence tools, data marts and data warehousing.

"We're trying not to make this a short-term solution, because ultimately we want to upgrade how we do grants management and our budgets across the board. We want to make sure we can use the same tools and reporting database beyond ARRA," Advani says.

ARRA's tight timeline and strict reporting deadlines have already driven some key process improvements in the state. For example, funding for ARRA transportation and highway projects had a 120-day "use it or lose it" deadline. But it typically took the state between 100 and 300 days to advertise projects and solicit bids from contractors. "We ended up drilling down into the system to get it down to a 40-day process, which is something we're proud about," Advani says.

Another long-term improvement is the creation of the program office itself. Going forward, the office will oversee all activities involving grants reporting, monitoring and compliance. The goal is to increase overall information transparency "beyond what's expected for federal reporting," says Advani.

Maine CIO Dick Thompson says he's already been directed by a legislative committee to ensure that IT work done to meet ARRA reporting requirements is also used to increase information transparency statewide. Before ARRA, for example, the state didn't provide electronic versions of contracts on its Web site — which is a requirement under ARRA. "Now, we'll take that technology and process new contracts through the same system so we can provide broader information on all contracts that have been awarded," he says.

The result of ARRA reporting, CIOs agree, is a lot like the road signs popping up that say: "Temporary Inconvenience, Permanent Improvement." ■

The Stimulus Law's Fast-Paced Schedule

Feb. 17: The American Recovery and Reinvestment Act is signed into law. The federal government's Recovery.gov Web site goes live.

Feb. 19: Federal agencies begin announcing block grant awards.

May 17: Agency and program plans are posted on Recovery.gov.

May - October: ARRA stimulus money is distributed to states and other recipients.

May - August: Reporting requirements and updates are developed and distributed.

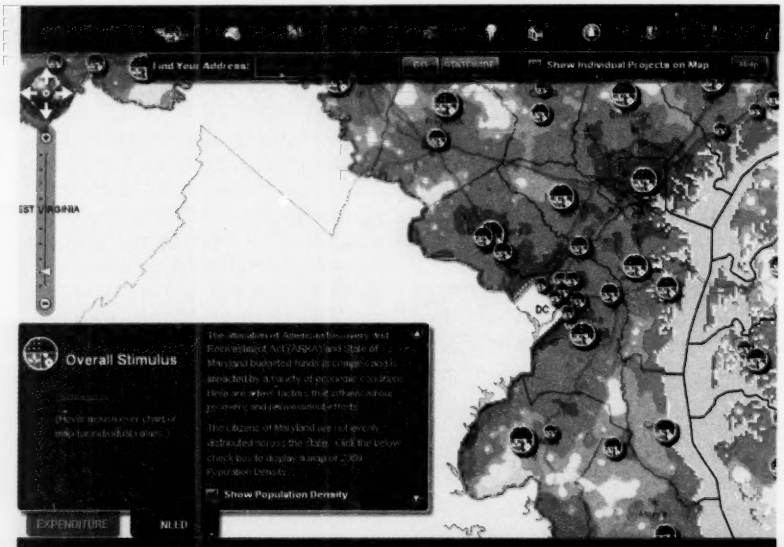
Sept. 28: Recovery.gov is relaunched with geographic mapping.

Oct. 10: The first quarterly deadline for recipient reporting is reached.

Oct. 30: Recipient grant and loan data is posted.

MARYLAND: Leader of the Pack

The state is a pioneer in using Web maps to track government spending and performance. By Robert L. Mitchell



Maryland's StateStat: This overview shows where stimulus money is being spent, by county. Users can mouse over specific counties to see dollar amounts. The colored "heat map" background indicates population density.

MARYLAND Gov. Martin O'Malley doesn't have to guess where federal stimulus funds will do the most good in his state: He can see for himself — and his constituents can, too.

The state has literally mapped out where every dollar from the American Recovery and Reinvestment Act (ARRA) is going. The data is displayed at StateStat, a Web site that pulls data from a geographic information system (GIS) that O'Malley's administration originally developed in 2007 to track the performance of state government.

With StateStat in place, "we were well equipped to track those recovery dollars and do so in an open, transparent and measurable way," O'Malley says.

Maryland's pioneering work with GIS and ARRA reporting caught the eye of Earl Devaney, who, as chairman of the Recovery Accountability and Transparency Board, pushed for GIS-based reporting on the federal government's new Recovery.gov Web site. That site, which relaunched on Sept. 28, uses similar technology to add spending maps. "This is one of the most important features on the whole Web site," says spokesman Edward Pound.

Visitors to Maryland's StateStat Web site can see the total amount of stimulus dollars coming into the state and the counties that are receiving those funds. Projects show up on maps as pushpin-style icons that vary in size with the spending within each area.

Building on templates originally developed for Maryland by GIS vendor Environmental Systems Research Institute Inc. (ESRI), some other states have begun using the same tools to build their own reporting Web sites.

RANKED NO. 1

What makes Maryland unique is the breadth and depth of data it provides, says Phil Mattera, research director at Good Jobs First, a Washington-based nonprofit research center that has ranked state Web sites based on how well they disclose expenditures from the $787 billion stimulus bill. Maryland is ranked No. 1.

At StateStat, visitors can view spending within specific categories, such as transportation and housing. From there, they can drill down to see the exact locations and details of specific programs and projects. In some areas, such as transportation, they can see who got the contracts, the winning bid, how far along the project is and the number of jobs each project will create. "Maryland is one of the few that has been doing that," says Mattera.

What's particularly powerful about StateStat is its potential to show visually whether spending matches up with the areas of greatest need. Visitors can view maps with overlays that show both spending data and need levels for every area. The need overlays might include regional unemployment

or foreclosure rates, for example. "The maps show us where the problems are and therefore where the opportunities are," O'Malley says. Most states aren't doing that yet, Mattera notes.

BALTIMORE ROOTS

StateStat, which the O'Malley administration launched shortly after taking office in 2007, is based on a system called CitiStat, whose development O'Malley oversaw when he was mayor of Baltimore. CitiStat was based on CompStat, a statistical reporting system used in New York in the late '90s to fight crime.

StateStat is built on ESRI's ArcGIS server platform. It uses Web services developed by the state as well as the StateStat templates that ESRI built in collaboration with Maryland and other states. ESRI has made those templates available at no charge to any state that wants to use them.

Since many state governments already use ESRI's GIS products, the incremental cost to implement the system is relatively small, says ESRI founder and President Jack Dangermond. Other states, such as Washington and Colorado, have used the templates to build their own reporting sites.

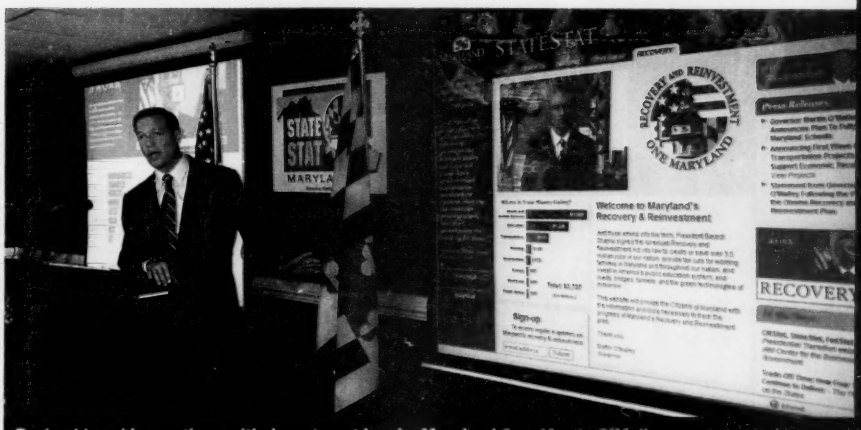
StateStat has the potential to show citizens the return on investment they get from get from government programs, and it could be used to hold agency chiefs accountable, O'Malley says.

During biweekly meetings with department heads, the governor uses GIS maps to track projects and the performance of departments. O'Malley says he uses GIS maps to quickly assess which divisions are performing well and which need new leadership. "That ability to recognize who the leaders are is what gets your entire organization to lean forward. That's what makes it go," he says.

But StateStat is far from perfect. "There's a lot of missing data," says Mattera, especially with regard to specific project details and performance metrics that show the impact of programs, such as the effect of weatherization initiatives on the number of applications for energy assistance.

"The data in there now is not as granular as we want it," says Beth Blauer, director of the StateStat program. But that's just one item on her wish list.

"We are still dealing with a lot of issues as they relate to getting the data into iMap," the ArcGIS server behind StateStat, says Blauer. Those issues include data ownership, accuracy, age, how often data is refreshed and whether it will be meaningful to decision-makers.



During biweekly meetings with department heads, Maryland Gov. Martin O'Malley uses GIS maps to track projects and departmental performance.

Because the state agencies use many different GIS servers and databases, they export data in Excel format and give it to Blauer's staff, who must import it manually. It has been particularly difficult to maintain data integrity and get updates automated, she says.

> **"The maps show us where the problems are and therefore where the opportunities are.**
>
> **MARTIN O'MALLEY,**
> GOVERNOR, STATE OF MARYLAND

Another goal is to add performance data that could, for example, illustrate the impact of a program by showing the effect of spending on the unemployment rate.

Blauer says that eventually, StateStat will be used at all levels of government and available to the public. "You'll be able to see where we are spending money in education and whether the test scores are getting better."

She also envisions adding tools to allow public participation online. "They will be able to engage in a dialogue with government using the data," she says. But that may take some time: Blauer has just five people on staff.

While the state of Maryland is using mapping technology to show where federal stimulus money is being spent, ironically, it has yet to do the same for the expenditure of funds from its own state coffers. Most information is still viewed by department, not by the geographic area where the money is actually spent. But O'Malley says he wants to move in that direction.

He also says he wants to make the raw data behind all of those pretty maps and charts available to the public as a download that could be imported into Excel, a GIS application or other analytical tools for further analysis (a feature that Recovery.gov already offers for all stimulus spending data — including Maryland's).

However, releasing the raw data behind all state government reporting means the administration will lose control of how results are presented. In the worst-case scenario, the data could be misused or misinterpreted.

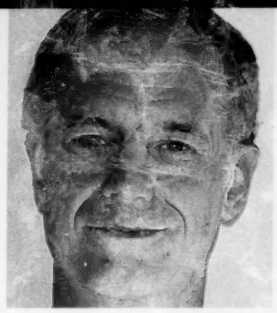
But O'Malley says he isn't worried. "I gamble wholly on the notion that people are smart and that, if given the information, [they] will make increasingly better decisions," he says.

Whether StateStat ushers in a new era of openness in government — or fades with the ARRA reporting requirements — will likely depend more on politics than on technology.

But O'Malley is optimistic. He points to his successor in Baltimore, who has continued to use CitiStat. "The public saw the value in it. That would have made it difficult to not continue doing it," he says. "Hopefully my successor here will also continue to do that [with StateStat]." ■

■ OPINION

Bart Perkins



World of Warcraft In the Workplace

COMPUTER GAMES are good, right? They're stimulating, challenging and fun. Just keep them out of the workplace.

That's what we've always been told, even though "stimulating, challenging and fun" are things the work environment always needs. Most corporations banned games ages ago. Unfortunately, that means they're missing out on an important way to transmit information.

Organizations got rid of games because they were distractions that wasted time, used too much computing power and created security holes. But there are compelling reasons for corporations to reconsider and maybe even create games for their employees to use (yes, at work!).

Games can teach and reinforce specialized skills. Moreover, they allow players to acquire and practice those skills without damaging expensive equipment or putting anyone in danger. According to a study at New York's Beth Israel Medical Center, surgeons who performed laparoscopic surgery were faster and more accurate if they had played video games extensively when they were younger. Today, some surgeons play video games as a warm-up exercise to improve fine motor coordination before performing laparoscopic surgery. The military uses war games to train soldiers for combat and uses simulators to help foot soldiers distinguish between combatants and noncombatants in urban settings. Commercial and military pilots receive much of their initial training in simulators.

Games can be used to anticipate and shape the future. Jane McGonigal created a massively multiplayer forecasting game, Superstruct, for the Institute for the Future (IFTF). The game invited players to propose solutions to possible global challenges, including massive energy shortages, terrorists with biological weapons, global food supply contamination, and large numbers of refugees fleeing economic and natural disasters. Superstruct players rewarded one another with points based on things like creativity, persuasiveness and cooperation. They came up with many creative solutions during the game's six-week life span, and many of the ideas were incorporated into the IFTF's 2009 Ten-Year Forecast.

■ Computer games can be used to anticipate and shape the future.

Games can also help get consumers interested in products without making them feel as if they are getting a sales pitch. Disney released a free iPhone game, RhinoBall, to promote the movie *Bolt*. And Honda developed an online racing game to promote its cars.

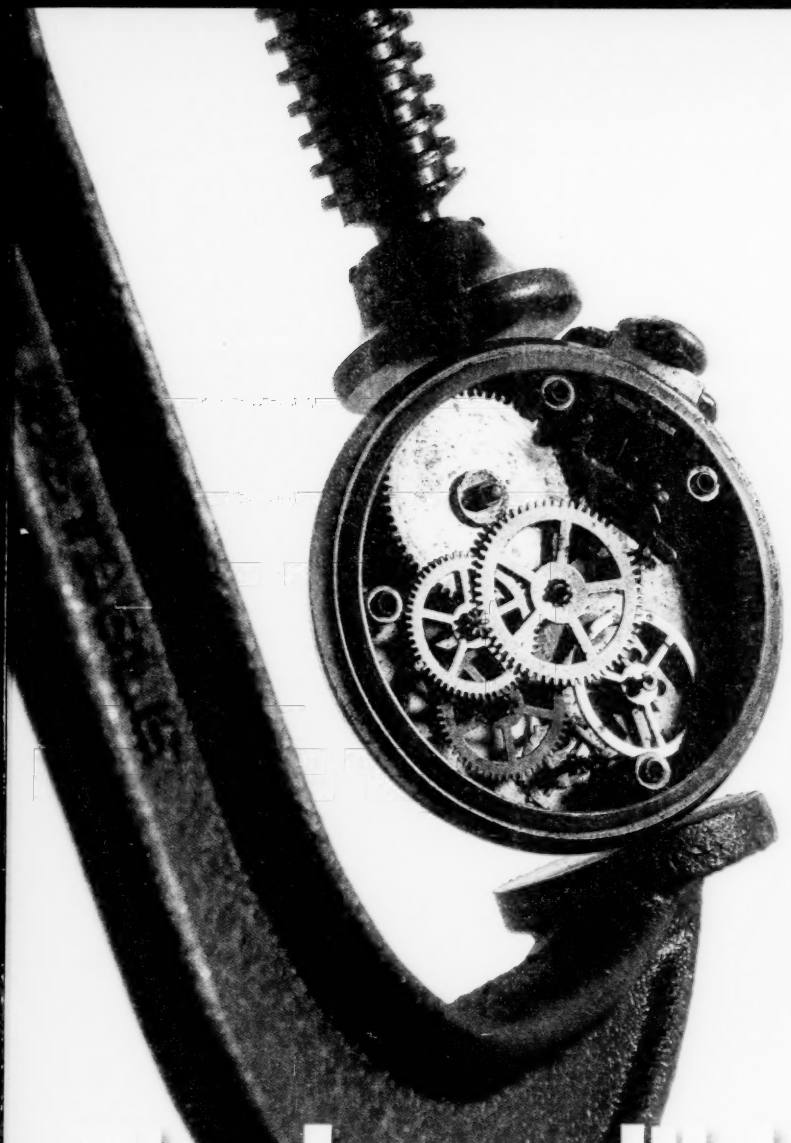
Back in the world of health care, the fifth annual Games for Health Conference focused on games promoting mental agility and wellness. The Robert Wood Johnson Foundation sponsors the Health Games Research program, which awards grants for developing interactive games that increase physical activity (such as dance pads) and improve self-care.

Effective games utilize many of the principles that made World of Warcraft so successful. Players participate in quests composed of challenging tasks that are satisfying to accomplish and are linked to a clear mission. Real-time feedback reflects players' progress.

These underlying principles can easily be applied in business. For example, games can help build a sense of community across a department or among a geographically dispersed workforce. Game interfaces can be adopted to provide feedback and promote healthy competition. Imagine gauges similar to those in World of Warcraft appearing on every customer service rep's screen.

Well-designed games can motivate workers and provide useful services to customers. Get ideas from the gamers in your organization. Someday gaming expertise may even become part of employees' annual performance goals. Wanna play? ■

Bart Perkins *is managing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. Contact him at BartPerkins@LeveragePartners.com.*



The Incredible Shrinking Data Center

Some IT managers say smaller is better, as they see lower real-estate and energy costs. By John Edwards

TOM GONZALES is planning to shrink his company's data center footprint from 45-by-15 feet to a mere 12-by-12 feet — and he couldn't be happier. "We're using more space than we need," he says. "We're going to return some of that to the company."

Gonzales, senior network administrator at Denver-based Credit Union of Colorado, says smaller is better when it comes to data centers — now more than ever, given the tight economy. "It's time to do more with less," he says.

SHRINKAGE AHEAD

29%

Percentage of IT managers at large companies who say that in the next few years they will "keep the same number of data centers but consolidate them so they occupy less space."

SOURCE: COMPUTERWORLD/IDC DATA CENTER STUDY, JANUARY 2009
BASE: 182 IT MANAGERS AT LARGE COMPANIES

Other IT managers are repeating that mantra, helping their companies cope with hard times by making their data centers smaller and more compact. IT managers have gotten to these more-productive footprints by using virtualization, high-density and multifunction hardware, alternative energy sources and modular design techniques. The savings accrue from decreases in energy bills, property costs and maintenance expenditures.

At the credit union, for example, server virtualization helped lower data center space requirements while making IT leaner and more efficient. "We used to have

© FOTOLIA / MARK APLET

40 boxes, now we're down to just a couple and a lot of virtualization. We have 12 racks right now, and we're going to consolidate that down to just four," Gonzales says.

The steady consolidation of servers and related resources over the past few years has left the credit union's old data center with plenty of excess room. "We've been trying to talk them into giving us a foosball table or a pool table in there because there's more than enough empty floor space," he jokes.

Actually, the freed-up space will be put to good use by the 80,000-member credit union. "We're in downtown Denver in our own building, but real estate here is expensive," Gonzales says. "We're trying to give some of our space to departments that [provide] member-facing services."

MORE THAN SIZE

Yet data center size shouldn't be the sole focus of cost-saving initiatives, warns Steve Sams, vice president of site and facilities services at IBM Global Technology Services. "The physical footprint is not where the cost of the data center is," he says. "The physical footprint typically represents, in traditional data center builds, 7% to 10% of the cost."

If space-conscious managers focus on systems and the accompanying support infrastructure, a footprint reduction will be the logical outcome, Sams says. About 60% of a data center's cost is from the power and cooling infrastructure — the air conditioning systems, the chillers, the generators, the uninterruptible power supplies, the power distribution units and so on, he says.

Five Ways to Get Small

Analysts and IT managers offer the following advice:

1 **Adopt virtualization. With virtualization, you can make more efficient use of your physical servers, reducing the hardware needed.**

2 **Use space-saving hardware. When shopping for servers, storage devices and other hardware, evaluate their shape and size and consider how the products will fit into your data center. If starting from scratch, consider designing a scalable, modular data center.**

3 **Look for devices that can handle two or more jobs. Use a combination firewall/router, for example, rather than single-purpose appliances.**

4 **Keep it simple. Limit the number of cables and fixtures you use, and consolidate any other gear you can.**

5 **Don't leave extra hardware lying around. Sell, give away or recycle unneeded equipment. If you think you might need to use a certain item in the future, perhaps as an emergency substitute, place it in an easily accessible storage area where it won't consume prime data center space.**

– JOHN EDWARDS

For the credit union, shrinking the data center cut out about 33 power ports and two circuits, Gonzales says. However, he adds, the organization doesn't have power measurement tools, so he can't quantify the energy and cost savings.

IT managers also need to pay attention to ongoing hardware density advancements, Sams adds. Using denser hardware, IT managers can shrink facility footprints and costs while keeping pace with rising workload demands.

"Technology is getting a lot smaller, [which] means you can jam a lot more of it into a smaller space," he says. "A data center may find itself doing three times the computing for two times the energy."

> **"Our objective is to have the data center as small as possible.**
>
> **PHIL COUNTY,** DIRECTOR OF IT SERVICES, VICTORIA UNIVERSITY

Phil County, director of IT services at Victoria University in Melbourne, Australia, is another manager looking to benefit from a compact data center. County is overseeing construction of a data center complex that will be large enough to meet the university's extensive computing and networking needs yet small enough to generate savings in hardware, energy usage, real estate and other areas.

"Our objective is to have the data center as small as possible," he says. "Rather than having one of those big football-field-sized data centers that used to be around in the old days — and still are in many places — we're creating a new kind of data center."

Victoria University operates 11 campuses and other sites in the greater Melbourne area, educating more than 45,000 students. The university views the new data center complex, located in two separate sites in the towns of Sunshine and Footscray, as critical to supplying educational services to its students and supporting administrative functions.

"We wanted to ensure that we plan for future growth, so we acquired a design and a solution that could meet our data center needs for at least the next 10 years — including increased power, cooling, space and floor load capacity," County says.

Although it will be operating the new data center in two locations, the university is creating a single logical facility that will offer redundancy and flexibility. The Sunshine facility will occupy 325 square feet, and the Footscray site will cover 650 square feet.

Virtualization, high-density racks and a modular design will enable the university to minimize energy demands. The data center also will use in-row cooling, targeted at the heat load source, and it will take advantage of Melbourne's chilly winter climate for free cooling.

Traditional cooling systems rely on electricity to drive compressors to reject heat and produce cold air, County says. The Victoria University cooling system has that capability, but it also will use ambient air within certain temperature ranges to reject heat and provide cooling.

"At [15 degrees Celsius] this process begins to work, providing free cooling, and

at below 5 C the ambient air temperature does all of the work of the compressors, thus saving clients the use of the compressors to provide the cold air," County says. "The system is set up to ensure that these processes work without requiring human intervention — so whenever the ambient temperature reaches the threshold, the system kicks in."

County says the data center is expected to use 45% less power than one with a conventional design, potentially saving more than 300,000 kilowatts of energy per year.

As the new data center takes shape, it's bringing together servers and other equipment previously scattered across Melbourne in various university buildings. "We've already centralized over 350 machines and reduced the number of boxes to about 240," County says.

VIVA VIRTUALIZATION

Virtualization is a must-have for reducing data center size and accompanying costs, says Peter Castaldi, co-founder and principal of Kovarus Inc., a South San Francisco-based firm that specializes in data center design. "If you take 100 servers and reduce them down to 10, that's 90 servers that you no longer have to pay an annual support fee on — servers you no longer have to pay electricity for 24 hours a day, seven days a week, 365 days a year, regardless of whether they're 10% or 100% utilized," he says.

Environmental costs also will collapse, he notes. "That's 90 servers you no longer need to pump cold air into to keep them from burning up," Castaldi says. On the other hand, IT managers shouldn't assume there will be a direct 90% reduction in energy costs, since the remaining 10 servers could very well have larger workloads, he adds.

While virtualizing servers is perhaps the best method of lowering hardware overhead, managers intent on slashing the size of their data centers also need to look for other technologies to virtualize. "Think [beyond] server virtualization — it's about virtualizing your entire data center," Castaldi says. "There's storage virtualization, desktop virtualization and virtual lab automation."

The biggest challenge in data center downsizing is planning, Gonzales says. "You really have to be careful in designing everything so that every last piece fits," he says. "You certainly don't have space to waste."

While some observers might expect IT managers — and their staffs — to resist being forced into a shrunken professional domain, Gonzales says that a smaller data center doesn't reflect on his skills as an administrator or the work his team performs. "We're judged on how well we do our job, not on how much area we consume," he says.

Although data center downsizing can lower many costs, Castaldi notes that enterprises need to be realistic in their expectations. Some data center costs — such as those associated with the size of the IT staff — aren't affected by the facility's size.

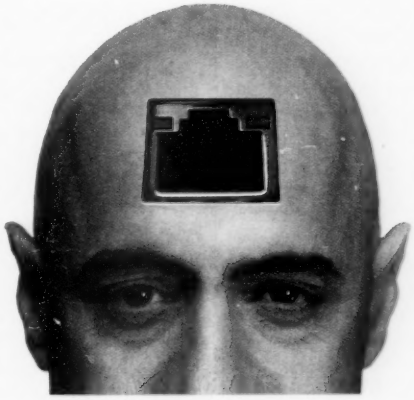
"We don't necessarily see companies reducing IT staffing levels," Castaldi says. "Instead, their IT staff can work more intelligently, and [managers] can get more bang for their buck out of them." ■

Edwards *is a technology writer in the Phoenix area. Contact him at jedwards@gojohnedwards.com.*

Their computer.
Your brain.

GoToAssist® Express™ lets you view and control your customer's computer online, so you can use your expertise to instantly fix the problem. You'll solve technical issues faster while reducing travel costs and increasing customer satisfaction. Support Smarter™ with GoToAssist Express.

FREE 30-Day Trial
gotoassist.com/computer

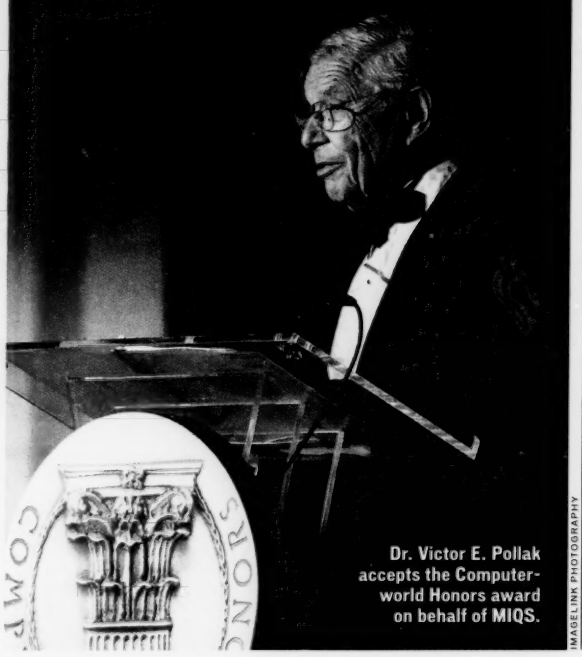


GoToAssist®

by CITRIX

UP-TO-THE-MINUTE MEDICINE

The real-time reporting engine in Disease Manager Plus helps doctors manage care for patients with chronic illnesses. By Mary K. Pratt



Dr. Victor E. Pollak accepts the Computerworld Honors award on behalf of MIQS.

IMAGELINK PHOTOGRAPHY

DECADES AGO, Dr. Victor E. Pollak came to an important realization: For all the good they do, doctors fail miserably when it comes to organization. They keep inefficient, inadequate medical records that fail to show a patient's long-term history.

Consider how traditional records for a typical diabetic patient are arranged. The patient's blood sugar results are in one place, his latest insulin prescription is in another, and the nurses' notes are somewhere else.

"I came to the conclusion that I was unable to care for my patients, I was unable to teach medical students, and I was unable to do research on my patients. And I decided that the problem was with the medical records and that a new medical record was needed to solve those problems," says Pollak, a leader in the field of nephrology, which involves the diagnosis and treatment of kidney diseases.

That revelation came in the mid-1960s, prompting Pollak to start building a new way of keeping records on his patients' treatments, prognoses and progress.

Pollak's frustration and subsequent innovation eventually led to the creation of MIQS Inc. and its Disease Manager Plus software package, which delivers a new type of medical record for the care of patients with chronic diseases. The software brings together in real time all the formerly separate data points on each patient or patient group and presents them according to each doctor's individual preference.

"All the information about a patient needs to be accessible equally. Our major asset is how we organize the data on the back end. It gives the doctors what they want to see at the point of care in the way they want to see it," says MIQS President and CEO George F. Rovegno. "And we have pretty persuasive data that if you get the data at the bedside, the patient will do better."

MIQS, which primarily markets Disease Manager Plus for the care of dialysis patients and patients with kidney disease, was named a 2009 *Computerworld* Honors Program honoree for its work on the software. And Disease Manager Plus itself has earned significant praise from medical professionals.

"There's nothing that comes close," says Dr. Jonathan Lorch, director of medical informatics at The Rogosin Institute, a treatment and research institution for kidney disease in New York.

Lorch, a nephrologist, started using Disease Manager Plus nearly 15 years ago while at a different New York clinic. "I wanted something that wasn't just a repository of data but rather something that would help us care for patients," he says, noting that dialysis patients experience a range of medical problems that must be managed.

Disease Manager Plus essentially provides a reporting engine to deliver better insight into patient care management, a function that Lorch sees as a key innovation. Thanks to the way the data elements are stored, he says he can pull together data to look at trends over time. Lorch calls it a time- and life-saving function.

The results of a study that Lorch and Pollak conducted in November 2007 back up that assertion. In the peer-reviewed journal *BMC Medical Informatics and Decision Making*, the physicians reported that they tracked how using Disease Manager Plus affected patient outcomes and found that mortality decreased by 48% in one unit after just two years of using the system. Moreover, they found that the mortality rate in the clinic's units were 35% to 40% lower than the national mortality rates reported by the U.S. Renal Data System. In addition, they reported that thanks to the system, clinical staffing was 25% lower per 100 patients

AT A GLANCE

- **MIQS Inc. in Boulder, Colo., makes Disease Manager Plus. A medical records software system for clinical and administrative use, Disease Manager Plus is designed to help caregivers manage patients with chronic diseases – particularly those undergoing dialysis. MIQS wouldn't disclose its annual revenue but says its software has had a role in the care of approximately 150,000 patients by more than 5,000 users over nearly 20 years.**

- **Project champions include John P. Flynn, vice president of engineering and co-founder; Dr. Victor E. Pollak, senior vice president, medical director and founder; and George F. Rovegno, president and CEO.**

- **MIQS has five IT staff members, including Flynn. Four are programmers working on Disease Manager Plus, while the fifth provides IT support for customers and the company itself.**

- **Disease Manager Plus users see a financial return on investment as well as better patient outcomes. MIQS officials say typical system costs are $35 to $75 per patient per month, while revenue improvements run $125 to $250 per patient per month. The best benchmarked performance was more than $1,500 in revenue improvement per patient per month.**

Picking Doctors' Brains

The programmers at MIQS don't have medical degrees, yet they're developing software for doctors and nurses who deliver highly complex medical care. The programmers' challenge of delivering a product that works for a specialty they haven't been trained in is familiar to many IT workers, who are called upon to build systems for business professionals ranging from appraisers to zoologists.

So how did the MIQS IT staff overcome that challenge and build the award-winning Disease Manager Plus?

Dr. Victor Pollak, the company's senior vice president and medical director, credits a "cooperative, ongoing relationship between software engineers and the physicians."

"People have to talk to each other," he says, noting that both sides work at listening to and understanding each other.

John P. Flynn, vice president of engineering at MIQS, says the IT staffers take advantage of Pollak's expertise and have daily interactions with the company's nurse educator as well as users who are interested in developing a collaborative relationship. "We do have a small number of doctors who talk to us programmers, and that's like gold," he says.

Flynn says having an environment that focuses on solving problems and not just on the bottom line also contributes to MIQS's success. Moreover, the company's philosophy emphasizes doing things the right way. That might mean that projects take longer or cost more, but the result, he says, is that "the software delivered ends up being a higher quality than it would be otherwise."

MARY K. PRATT

than the national average.

Eric Brown, an analyst at Forrester Research Inc., says that electronic health records, and specifically those systems that offer reporting capabilities, hold promise for controlling costs and improving care. However, he says only some hospitals and large physician groups are implementing systems that incorporate analytics.

"The sad reality is that there's still a minority of doctors and hospitals that have the data to begin with," Brown says. Some facilities still store patient information on paper; others might store it electronically, but different pieces are in different places, making it difficult or impossible to pull together all the pieces to analyze.

But Brown notes that there's a push to have the health care industry capture data electronically and adopt analytical software. "We've matured, and there are much more sophisticated and mature systems available. We're getting there," he says.

Although Pollak started to develop this type of medical record back in the 1960s, the foundation for MIQS dates to the 1980s, when he worked with programmers John P. Flynn and Andy Flatt at a dialysis center to develop an in-house electronic patient records system.

Those three were among the five founders of MIQS, which opened in 1990.

Flynn, now the company's vice president of engineering, says 1980s-era medical records software was built mainly to handle administrative functions, such as the processing of insurance claims. Pollak, however, wanted software that focused on patient care and could pull together data for caregivers to see instantly, he says. Disease Manager Plus, which was first released in 1992, filled that need.

Flynn says the company opted to put its front-end software in a relational database, using Sybase Inc. products from the start. He says the company picked Sybase at the time because it was smaller than some other vendors and could give MIQS more personal service and technical support while providing the sophistication it needed.

Flynn says input from Pollak and the caregivers using the application was critical to the design of the software and is still crucial to its evolution.

MIQS makes 500 to 800 enhancements to the system every year, Rovegno says, building on suggestions and requirements from the caregivers who use it. Company officials say R&D costs have run between $12 million and $16 million annually.

Flynn says MIQS has taken advantage of new technologies, particularly wireless networks and handheld devices, to help increase the mobility of caregivers.

He says he'd like to add more support for handheld devices. And while the product has a number of security features to ensure HIPAA compliance, Flynn also says he'd like to add other authentication tools, such as fingerprint readers. ■

Pratt *is a* Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

"[Disease Manager Plus] gives the doctors what they want to see at the point of care in the way they want to see it. And we have pretty persuasive data that if you get the data at the bedside, the patient will do better. – **GEORGE F. ROVEGNO,** PRESIDENT AND CEO, MIQS

Better Security For Not Quite All

A new policy preventing users from opting out of **password-protected screen locks** actually **reduces the level of protection** for some.

IT'S SCARY to think how much sensitive or even valuable information can be gleaned from an untended PC, even one whose user just walked away for a few minutes. That's the sort of thing that security managers fret about but the rest of the world hardly notices.

And it's one of the reasons I'm on the verge of deploying a group policy to enforce a password-protected screen lock on every device used to log into my company's domain. The high-profile impetus for this policy change was the laptop thefts that I wrote about a while back, but just as compelling for me is our move to an open workspace. Maybe security managers just see vulnerabilities wherever they look, but an open workspace looks like a security nightmare to me. I've already seen too many employees simply walk away from their workstations on the open floor, leaving their e-mail, work documents or personal information readily visible on their screens.

With this policy change, users will no longer be able to alter any settings related to the password-protected screen lock other than their choice of screen saver. We've decided to set the lockout at 15 minutes, which I know will increase the overall security posture of the company, because until now users have been able to turn off the lockout entirely — and several have done so. We know this because we recently did a query of the PCs attached to our domain, in order to ascertain how lockout was configured on them. We found that more than 70% of our approximately 6,000 users had disabled both the password requirement and the screen saver.

But that query presented me with a quandary. That's because we also found that some 1,500 users had strengthened their lockout policies by decreasing the time limit to less than the 10 minutes that we had used as a baseline configuration. So the new policy will represent a more lenient security setting for those 1,500 people, who no longer will be able to choose a time of less than 15 minutes.

■ Over 70% of users had disabled both the password requirement and the screen saver.

What concerns me is the message we will be sending to those employees. They have shown the sort of awareness of security issues that I try to instill in the entire workforce, and now we're rolling out a policy that seems to say that their security consciousness was unnecessary. We'll have to make sure that isn't the message they take away from this change.

AHEAD OF THE PACK

When I proposed the change in our lockout policy to the CIO, he asked me to determine what other companies in our industry are doing. I have a pretty decent network of peers in this industry, so I asked them whether they enforce a screen lock — and if so, what the timeout value is, and if not, what their policy regarding screen locks is. I was surprised by the results: Only one of the 20 companies in my survey enforces the screen lock. That wasn't the response I had anticipated, and it certainly wasn't what I wanted to report to the CIO. In the end, though, he agreed with me that this is one area where it's worth bucking the industry norm.

So we are moving forward, although I have agreed to allow certain exceptions to the policy. Employees eligible for exemptions include developers and users who frequently do presentations or hold online meetings. Exceptions will be executed by placing those users into a separate Active Directory group that won't have the screen lock policy applied.

Meanwhile, my efforts to educate the staff will continue. I will follow up the policy deployment by putting up posters to remind users that even though their screens now lock after 15 minutes of inactivity, they should still manually lock their screens whenever they step away from their PCs. ■

This week's journal is written by a real security manager, ***"Mathias Thurman,"*** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

Trouble Ticket

AT ISSUE: Most users have disabled timed screen lockouts.

ACTION PLAN: Take away the option of disabling the lockouts.

COMPUTERWORLD.com

JOIN IN

To join in the discussions about security, go to **computerworld.com/blogs/security**

Finally, a server room solution for people without a server room.

Introducing self-contained, integrated "cooled enclosure" solutions now available for non-IT spaces.

Need more IT room but don't have the floor space or budget? No problem.

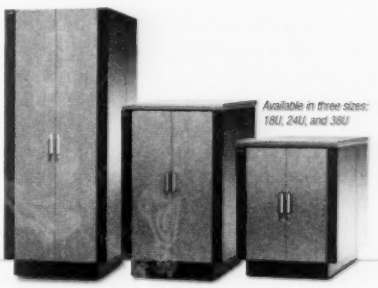
APC introduces NetShelter CX Office, the integrated rack enclosure designed to keep IT equipment cool, quiet, and secure while blending seamlessly into any office environment. Housed in an attractive wood veneer cabinet, NetShelter CX Office combines the technology IT managers demand with the style decorators appreciate. Now you can deploy servers and networking equipment right in the workspace – no need for a dedicated computer room.

A rack enclosure so quiet, you won't know it's there

The soundproof construction allows you to place the NetShelter CX Office anywhere without disrupting day-to-day office activity. The ultra-quiet air cooling system and advanced sound-dampening features reduce server noise by more than 98 percent – lowering it to the same unnoticeable background hum of building air conditioning.

Integrated, all-inclusive plug-and-play solution

Fully portable, completely pre-assembled, and carefully pre-tested, the NetShelter Office gives you integrated power distribution, cable management, and high thermal capacity in a standard size rack enclosure. Add the award-winning APC Smart-UPS and environmental monitoring and management software and you have a complete IT package. All you need to do is decide where to put it.



Available in three sizes: 18U, 24U, and 38U

Expand your server room space without building out.

The unique NetShelter Office CX enclosure solution includes everything you need to house a highly reliable IT deployment anywhere you have empty space.

- > Available in three convenient sizes: 18U, 24U, and 38U.
- > Supports nearly every major server series.
- > Zero U power distribution unit—no need for additional rack-mount PDU.
- > Soundproof cooling handles up to 3.6kW thermal capacity.
- > Removable side panels for easier maintenance and installation.
- > Locking doors for security.

Learn how to reduce cooling expenses with our FREE Cooling Efficiency kit.

Visit www.apc.com/promo Key Code n137w • Call 888-289-APCC x8249 • Fax 401-788-2797

APC by Schneider Electric

©2009 Schneider Electric. All Rights Reserved. Schneider Electric, APC, NetShelter, and Smart-UPS are owned by Schneider Electric, or its affiliated companies in the United States and other countries.
e-mail: esupport@apc.com • 132 Fairgrounds Road, West Kingston, RI 02892 USA • 998-2338

■ OPINION

Thornton A. May

Do Org Charts Still Matter?

BEFORE THE financial meltdown, were the organizational charts of Lehman Brothers and Bear Stearns (both now extinct) noticeably different from the organizational arrangements at Goldman Sachs (whose brand and revenue are now ascendant)? Not really.

The fact that similar organizational charts can lead to fundamentally different business outcomes prompts one to ask whether org charts still matter. Do they convey the information we need?

Org charts are maps, of sorts. There is a passage in Shelby Foote's masterful history of the Civil War describing Robert E. Lee poring over a map of the Virginia countryside in preparation for the battle at Chancellorsville in 1863. Lee, according to Foote's account, "kept peering at a map spread on his knees; he peered so intently, indeed, that he seemed to be trying to make it give him information which it did not contain." That, unfortunately, describes too many of today's business leaders bent over their org charts. They are trying to make those "maps" give them information that they do not contain.

But org charts can be devised that contain far more relevant information. The org chart was invented not long before Lee camped at Chancellorsville, to help the trains run on time. The world has changed much since the early days of the industrial revolution. The organizational charts of most corporations have not. Thus, it's not surprising that key elements of 21st-century value creation are not depicted on most org charts.

At an abstract level, organizations can be conceptualized as amalgams of responsibilities and accountabilities (what specific people are supposed to do); knowledge (what people know); process (how things get done); interactions (the combination of people, knowledge and process); and futures (what comes next).

■ What if your org chart depicted interactions and knowledge, and not just the visible organization?

Traditional org charts depict only the first element of organizational design — responsibility and accountability. Think what you could do with one that depicted some of those other elements.

Take interactions and knowledge, for example. Corporate anthropologist Karen Stephenson, a frequent contributor to research being conducted at the IT Leadership Academy in Jacksonville, Fla., has rightly been recognized as a pioneer in the science and practice of social networking. Among her accomplishments, she has developed complex mathematical algorithms to assist in our understanding of the interactions that are critical to value creation.

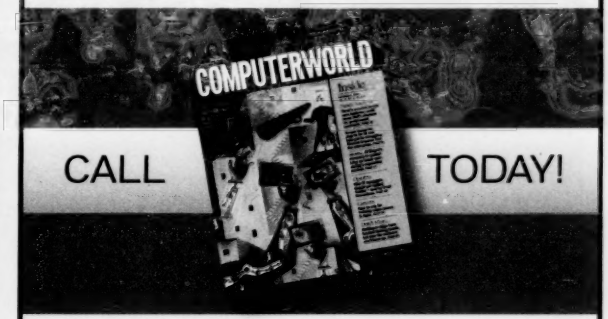
This means it's possible to devise mathematically derived social network maps in your enterprise. You can go beyond an org chart of the visible organization to a map of the more important, informal organization, which is really a complex web of interactions: face-to-face and device-to-device exchanges of data, information, knowledge, intent, aspiration and angst. Using the tools of social networking renders these interactions more understandable and more manageable.

And "how things get done" and "what comes next" are also not out of reach of organizational maps. Take as an example what's happening in the innovation department at McDonald's. Informed by senior management, the innovation team has created an "organizational/operational" spreadsheet that assembles a portfolio of possible futures. These futures, termed "restaurant concept cars" by observers, are carefully vetted by franchisees and rigorously stress-tested to make sure they will work in the real world.

Without a doubt, this puts the people who invented the quick-service restaurant industry ahead of the curve in how they think and prelive the future. How far ahead of you will you let them get? ■

Thornton A. May *is a longtime industry observer, management consultant and commentator. You can contact him at thorntonamay@aol.com.*

Your message works in the Marketplace section!



To advertise, call or email Enku Gubaie at:

508.766.5487

egubaie@idgenterprise.com

Instantly Search Terabytes of Text

- 25+ full-text and fielded data search options (with Unicode support for hundreds of international languages)
- Built-in file parsers / converters highlight hits in popular file types
- Spider supports static and dynamic web data; highlights hits with links, formatting and images intact
- API supports .NET, C++, Java, SQL, etc. .NET Spider API

The Smart Choice for Text Retrieval® since 1991

"Bottom line: dtSearch manages a terabyte of text in a single index and returns results in less than a second" — *InfoWorld*

dtSearch "covers all data sources ... powerful Web-based engines" — *eWEEK*

"Lightning fast ... performance was unmatched by any other product" — *Redmond Magazine*

See www.dtsearch.com for hundreds more reviews, and hundreds of developer case studies

Fully-Functional Evaluations

1-800-IT-FINDS • www.dtsearch.com

Career Watch

The Employment Outlook

Expect new hiring in the technology sector to be cautious for the rest of the year, says Robert Half Technology, whose IT Hiring Index and Skills Report for the fourth quarter shows that 6% of CIOs surveyed expect to expand their IT teams, while 6% are planning staff reductions. RHT calls that a wash, though there's nothing to suggest that those hiring and those laying off will do so at the same rate. Here are some other findings from the survey:

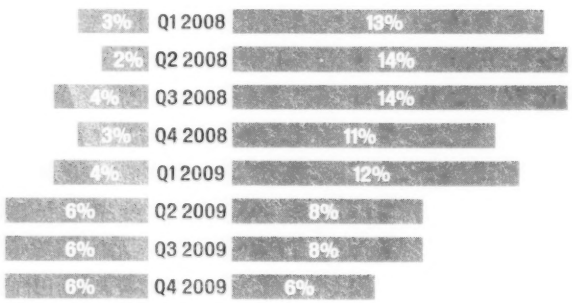
- The best region for getting hired might be New England, where 8% of managers expect to expand staffs, while only 4% anticipate staff reductions.
- Companies with 1,000 or more employees will be the most likely to hire new staff, with 11% of managers at such companies saying they plan to do some hiring, compared with 7% who expect to let staff go. At the same time, a study by Forrester Research Inc. concludes that midsize businesses offer more stable employment for tech workers, with fewer layoffs. The two studies aren't contradictory; it could be that large companies have to do more hiring now to make up for their larger layoffs earlier.
- Network administration is the skill most in demand, cited by 69% of the respondents.

THE QUARTERLY STUDY IS BASED ON MORE THAN 1,400 TELEPHONE INTERVIEWS WITH CIOs FROM A RANDOM SAMPLE OF U.S. COMPANIES THAT HAVE AT LEAST 100 EMPLOYEES.

CANCELED OUT

■ = CIOs expecting to hire
■ = CIOs expecting layoffs

Hiring expectations remain well below last year's levels, while layoff expectations remain much higher.



SOURCE: ROBERT HALF TECHNOLOGY IT HIRING INDEX AND SKILLS REPORT, AUGUST 2009

PAGE COMPILED BY JAMIE ECKLE.

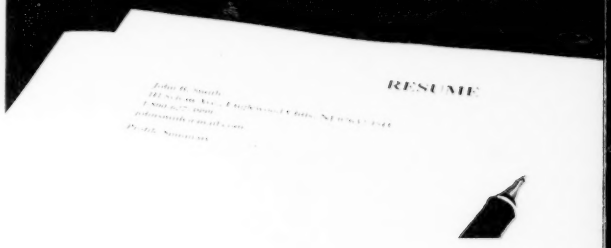
Marketing You

Résumés still matter, because they are the best way for job hunters to present a quick synopsis of their skills – to make a compelling argument for why they are the best choice for the job. But just slapping all your degrees and accomplishments on an 8 1/2-by-11-inch sheet of paper and adding your contact information isn't enough. Design matters, because you want your skills and experience to leap out at hiring managers.

One group that takes résumés very seriously is Career Directors International. It hosts an annual competition among professional résumé designers, and it also makes some résumé professionals available at career fairs to provide brief critiques of people's résumés. (Go to NationalCareerFairs.com to find out when a fair will be held near you.)

You might also keep an eye on the CareerDirectors.com site to see whether winners of this year's résumé competition – which was held on Oct. 17 – have been posted, as they have been in years past.

One intriguing approach that was used by the winner of last year's contest seems especially adaptable for IT workers. Sharon Williams of JobRockit.com used an eye-catching chart in a résumé for a sales manager. The chart illustrated retention rates for clients of a weight-loss clinic, but it could just as easily have shown network availability under your stewardship or a decline in data breaches since you took over security at your company.



What's Your Earning Power?

COMPUTERWORLD SALARY SURVEY 2010

How does your pay compare with that of your peers? *Computerworld*'s 24th Annual Salary Survey will feature the latest IT salary trends and advice on where to find the best-paying jobs. This year's survey participants can enter a drawing to win one of 10 new 8GB Apple iPod Nanos, which feature a built-in video camera, a larger screen than previous models and an FM radio. The drawing is open to legal U.S. residents age 18 or older. **Take our annual Salary Survey today at computerworld.com/salary2010M.**

No. 1 Ranking of computer science/IT among fields of study recommended by HR professionals in a survey by Challenger, Gray & Christmas Inc. In the survey, conducted in August, 150 HR professionals were given 11 fields of study and asked to select one that they would highly recommend to college-bound students.

Didn't find the IT career that you were looking for?

Check back with us weekly for fresh listings placed by top companies looking for skilled professionals like you!

IT|careers

MANAGEMENT ANALYST

Analyzes business and operating procedures to develop recommendations on efficient methods of accomplishing work. Plans study of work problems and procedures. Gathers and organizes information on problem or procedures. Analyzes data gathered, develops information and considers available solutions or alternate methods. 40 hrs/wk. $6,044.17/m. Jobsite: Jacksonville, FL. Must have MBA or Bachelor's degree plus 5 yrs. exp. Send ad/resume to: HR 7710 Watermark Ln. S. Jacksonville, FL 32256

HIDEF Technologies seeks system analyst/admtor, s/w engineer, DBA to design and customize applications using skills such as Oracle, DB2, Java, EJB, WebTech, VB, C/C++, etc. Require MS/BS with 1-5yr exp. Travel required. Apply at info@hideftech.com. EOE

Thought Byte, Inc. seeks Software Analyst to design applications using Parallel Extender, Metarecon, PVCS, Ascential DataStage 7.1, TestDirector 7.5, Toad, Oracle 9i, and Autosys. Job site: Dearborn, MI. Req MS. Send resume to hr@ thoughtbyte.com

Research In Motion Corporation (US), Irving, TX, positions are available:
Field Test Specialist – TX4002
Member, Technical Staff – TX4003
Research In Motion Corporation (US), Sunrise, FL, positions are available:
Software Test Specialist – FL4004
Build & Integration Specialist – FL4005
Research In Motion Corporation (US), Redwood City, CA, positions are available:
Software Developer – CA4006
Research In Motion Corporation (US), Bellevue, WA, positions are available:
BIS-E Systems Engineering Specialist – WA4001
Research In Motion Corporation (US), Lincolnshire, IL, positions are available:
Systems Performance Specialist – IL4007

Submit resume to Research In Motion (US), to P.O. Box 141394, Irving, TX, 75014-1394 U.S.A. referencing appropriate job title and requisition number.

Sogeti USA LLC, an IT Consulting Co. HQ in Dayton, OH, currently seeks IT professionals to fill Consultant positions located nationwide. Specific skill sets needed include:
• Web Development (Application Solutions) - Job #010 (send to Sogeti-1009-job010@sogeti.net)
•Business Intelligence (Information & Data Management) - Job #020 (send to Sogeti-1009-job020@sogeti.net)
•Database Services (Infrastructure Services) - Job #030 (send to Sogeti-1009-job030@sogeti.net)
•CRM Consultants (Business Solutions) - Job #040 (send to Sogeti-1009-job040@sogeti.net)
• Architecture Services – Job #50 (send to Sogeti-1009-job050@sogeti.net)
•Testing & QA Analysts (Testing & QA Services) - Job #060 (send to Sogeti-1009-job060@sogeti.net)
•Network Services (Infrastructure Services) - Job #070 (send to Sogeti-1009-job070@sogeti.net)
• ERP Consultants (Business Solutions) - Job #080 (send to Sogeti-1009-job080@sogeti.net)
• PLM Consultants (Engineering Services & PLM) - Job #090 (send to Sogeti-1009-job090@sogeti.net)
• Legacy/Other - Job #100 (send to Sogeti-1009-job100@sogeti.net)
• Business Analysts - Job #110 (send to Sogeti-1009-job110@sogeti.net)
•Project Managers (Project Management Services) - Job #120 (send to Sogeti-1009-job120@sogeti.net)
FOR CONSIDERATION, YOU MUST (1) SEND EMAIL W/ RESUME TO EACH APPLICABLE EMAIL ADDRESS, AND (2) HAVE AUTHORITY TO WORK PERMANENTLY IN U.S. Entry through Sr. level positions available. Competitive salaries. Must be willing to travel/relocate.

ATTENTION...

Law Firms
IT Consultants
Staffing Agencies

Are you frequently placing legal or immigration advertisements?

Let us help you put together a cost-effective program that will make this time-consuming task a little easier!

Place your Labor Certification Ads here!

For more information contact us at:
800.762.2977

IT|careers

Apollo Group located in Phoenix, AZ has multiple openings for IT professionals. Specific skill sets needed include:
•.Net developers JO-010
•JAVA/J2EE JO-020
•Data warehousing developers JO-030
•Oracle Developers/DBA JO-040
•Quality Assurance Analysts JO-050
•Systems Administrators JO-060
•Web-based Developers JO-070
•Business Analysts JO-080
•PeopleSoft JO-090
All positions require at least a B.S. degree in related field. Some positions require an M.S. degree. Competitive salaries. Send resume to:
apolrecruitment@apollogrp.edu

Oracle Application Database Administrator (R12-Apps DBA) (National Placement out of Murrysville, PA, Multi Positions). Candidate must have BS or equiv + 5yrs of related IT exp. Degree may be in Eng'g or Computers. Candidate must have exp installing, configuring, managing, troubleshooting, performance tuning, cloning, of Oracle E-Business Suite on Multi node & Multi platforms with RAC Options. Must be certified as an Apps DBA & Oracle 10g DBA w/ strong skills in J2EE, PL/SQL, OC4J, Oracle: IAS, Forms, Reports & J-Developer. Able to relocate. 9-5, 40 hrs/wk. Salary $70,000/year. Use Ref# DBA-909-LG, send resume to Logix Guru, LLC. 3821 Old William Penn Hwy, Murrysville, PA 15668 or hr@logixguru.com. Logix Guru, LLC is an EOE M/F/V/D.

Superior Tech seeks programmer/analyst, DBA to customize applications using skills like Oracle, Java, J2EE, DB2, WebSphere, VB, etc. MS/BS with 5-yr IT exp. Relocation required. Send resume: 24383 Myrtle Ct, Novi, MI 48375.

Application engineer wanted by SenSound, LLC to develop and promote noise diagnostic software, develop test application. Min is MS or BS with 5-yr exp. Send resumes to 221 Lewiston Rd, Grosse Pointe Farms, MI 48326.

Systems Analyst, Jacksonville, FL and other client locations: Analyzes, designs, develops, implements, customizes and maintains applications and systems using WAS, HTML, Erwin, Win Runner, Shell Scripting, MVS/ESA, COBOL II, JCL, DB2, CICS, MQ Series, Toad, Sybase, Oracle, .Net, SQL Server, Facets, Unix, and Windows NT/2000. Bachelors or Equivalent in CS, CIS, MIS, Engineering (any field), Math, Business, Technology, or related with five years of experience. Mail resume to LBInfosys, Inc, 10635 Brighton Hill Circle North, Jacksonville, FL 32256

Software Engineers, Applications (Multiple Positions with National Placement out of Hilliard, OH) Analyze, design, test, customize and implement computer software applications. Bachelor Degree or equivalent in Engineering or Computers and two years related experience. Must have experience with COBOL, NATURAL, CICS, JCL, VSAM, DB2, ADABAS, MQ, IMS-DB/DC, TSO/ISPF, SPUFI, FILEAID AND ENDEVOR. Must be able to relocate to different client sites as needed. 9-5, 40 hrs/wk. $69,100 per year. Ref# CMF-909 and send resume to HR, Yashco Systems Inc, Park West Professional Plaza 3974 Brown Park Drive, Suite H, Hilliard, OH 43026. EOE M/F/V/D.

Systegration, Inc. in Glenview, IL seeks Software Engineer/ Developer w/ B.S. in C.S. or IT & 3 yrs exp in job or as Programmer. Send res: jobs_stg@yahoo.com.

Oracle DBA needed w/exp in unanticipated clients sites. Must be Oracle DBA certified. Mail resume to: Collabera, Attn: Hireme, 25 Airport Rd, Morristown, NJ 07960.

Shark Tank

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

Who, Me?

Network admin – let's call him Fred Smith – sends an e-mail to his site's applications admin, database admin, developer and interim IT manager. "He said that there was a database created on the main C: drive of a production server," says a pilot fish on the scene. "He explained that this is a very dangerous practice, because the database could fill and cause the server to crash." App admin, DBA and developer all promptly reply, each saying he didn't create the database and doesn't know who might have. But the net admin is adamant – it's crucial to find out how the database was created so it doesn't happen again. After a short pause, app admin replies again: "Just checked the properties of that database. The owner is fsmith." Says fish, "We never heard another peep from the network admin the rest of that day."

Priorities

Staffers at this private school call consultant pilot fish on a Monday morning to report that they can't access the Internet. "A quick check at the wiring closet showed that the Ethernet from the cable modem to the router had been disconnected," fish says. "Turned out that the owner of the school had been in that Saturday and was unable to access his favorite sports Web site. He disconnected the cable and plugged it directly into his laptop for unrestricted access – but neglected to reconnect it when he left. It was an easy fix, and we did create an exception for him so he wouldn't need to do that again. After all, the boss is *always* right!"

That's Ergonomics!

Receptionist in this doctor's office has been working there for three or four years and using a PC the whole time, reports a pilot fish who works there too. One day, fish is looking on as the receptionist reviews a patient's file. But some of the information she needs is below the bottom of the screen. Scroll down, fish suggests. "Scroll down?" receptionist asks. "How do I do that?" Just use the wheel on the mouse, says fish. "The wheel on the mouse?" she says. "You mean the finger exerciser? I thought that was for exercising my fingers when my hand got tired."

Aha!

User calls support pilot fish with an improbable story: She says she dropped her mouse and her PC shut down. Fish makes the trip to her desk. No question, her computer is off. And when fish punches the power switch to restart it, nothing happens. "I asked her where she dropped her mouse," says fish. "She replied, 'Behind the desk.' Sure enough, she had managed to hit the on/off switch on the power strip. I told her, 'Good shot.' "

■ *Hit Sharky with your true tale of IT life at sharky@computerworld.com. You'll score a sharp Shark shirt if I use it.*

COMPUTERWORLD.COM

DO YOU LOVE SHARK TANK? Then you might like Shark Bait. Dive in and dish the dirt with like-minded IT pros. **sharkbait.computerworld.com**

CHECK OUT Sharky's blog, browse the Sharkives and sign up for Shark Tank home delivery at **computerworld.com/sharky.**

■ COMPANIES IN THIS ISSUE

Page number refers to page on which story begins. Company names can also be searched at computerworld.com

Ace Hardware Corp. 44
Africa Analysis 11
Apple Inc. 14
Automatic Data Processing Inc. 14
Beth Israel Medical Center 30
Career Directors International 40
Challenger, Gray & Christmas Inc. 40
Credit Union of Colorado 31
Data Center Knowledge 10
Deloitte LLP 10
DRI International 16
Endpoint Technologies Associates Inc. 14
Energizer Holdings Inc. 14
Environmental Systems Research Institute Inc. 28
Facebook Inc. 10, 18
Forrester Research Inc. 35, 40
Gartner Inc. 8, 14
Gateway Innovations Ltd. 11
Georgia Institute of Technology 10
Goldman Sachs Group Inc. 38
Good Jobs First 24, 28
Harvard University 11
Honda Motor Co. 30
IBM Global Technology Services 31
Institute for the Future 30
IT Leadership Academy 38
JobRockit.com 40
Kovarus Inc. 31
Leverage Partners Inc. 30
Linden Lab 8
Microsoft Corp. 8, 14, 18, 24
Microsoft Research Silicon Valley 18
MIQS Inc. 34
National Science Foundation 10, 11
Net Applications 14
Office of Management and Budget 24
Pella Corp. 14
Robert Half Technology 40
Robert Wood Johnson Foundation 30
Sybase Inc. 35
The Rogosin Institute 34
The Walt Disney Co. 30
Trust for America's Health 16
Twitter Inc. 18
U.S. Centers for Disease Control and Prevention 16
U.S. Department of Health and Human Services 16
Victoria University 31
WinAfrique Technologies Ltd. 11
World Health Organization 16

1&1 Internet 15
1and1.com
APC 17, 37
apc.com/promo
Citrix 4-5
Citrix.com/SimplicityIsPower
Citrix 33
gotoassist.com/computer
dtSearch 39
dtsearch.com
HP 22-23
hp.com
IBM IT Campaign C2-1
ibm.com/flexible
IBM ES Campaign 9
ibm.com/systems/virtualize
IBM ES Campaign 11
ibm.com/systems/available
Juniper 12-13
TheNewNetworksHere.com
NEC 19
nec.com/cases/rms
NetApp 3
netapp.com/and
Qwest C3
qweshclutions.com
SAS C4
sas.com/otters
Sprint 7
sprint.com/convergence
Verizon Wireless 21
verizonwireless.com/smallbusiness

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

Periodical postage paid at Framingham, Mass., and other mailing offices. Posted under Canadian International Publication agreement PM40063731. **CANADIAN POSTMASTER:** Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A 7C9. Computerworld (ISSN 0010-4841) is published twice monthly by Computerworld Inc., 492 Old Connecticut Path, Box 9171, Framingham, Mass. 01701-9171.

Copyright 2009 by Computerworld Inc. All rights reserved. Computerworld can be purchased on microfilm and microfiche through University Microfilms Inc., 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Computerworld is indexed. Back issues, if available, may be purchased from the circulation department. Photocopy rights: permission to photocopy for internal or personal use is granted by Computerworld Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of $3 per copy of the article, plus 50 cents per page, is paid directly to Copyright Clearance Center, 27 Congress St., Salem, Mass. 01970. Reprints (minimum 100 copies) and permission to reprint may be purchased from Ray Trynovich, Computerworld Reprints, c/o The YGS Group, Greenfield Corporate Center, 1808 Colonial Village Lane, Lancaster, Pa., 17601, (800) 290-5460, Ext. 148. Fax: (717) 399-8900. Web site: www.reprintbuyer.com. E-mail: computerworld@theygsgroup.com. Requests for missing issues will be honored only if received within 60 days of issue date.

Subscription rates: $5 per copy. Annual subscription rates: – $129; Canada – $129; Central & So. America – $250; Europe – $295; all other countries – $295. Subscriptions call toll-free (888) 559-7327. **POSTMASTER:** Send Form 3579 (Change of Address) to Computerworld, PO Box 3500, Northbrook, Ill. 60065-3500.

BPA WORLDWIDE | ABM

COMPUTERWORLD

HEADQUARTERS
P.O. Box 9171, 492 Old Connecticut Path
Framingham, MA 01701-9171
(508) 879-0700
Fax (508) 875-4394

President/CEO
Michael Friedenberg
(508) 935-4310

Executive Assistant to the President/CEO
Diana Cooper
(508) 820-8522

Senior Vice President/ Group Publisher
Bob Melk
(415) 975-2685

Senior Vice President/ General Manager Online
Martha Connors
(508) 620-7700

Vice President/Marketing
Sue Yanovitch
(508) 935-4448

Senior Vice President/ Chief Content Officer
John Gallant
(508) 766-5426

Senior Vice President/ Human Resources
Patty Chisholm
(508) 935-4734

Senior Vice President/ Events
Ellen Daly
(508) 935-4273

Senior Vice President/ Online Sales & Operations
Gregg Pinsky
(508) 271-8013

Senior Vice President/COO Enterprise Services Group
Matthew C. Smith
(508) 820-8102

IDG

International Data Group
Chairman of the Board
Patrick J. McGovern

CEO, IDG Communications
Bob Carrigan

Computerworld is a business unit of IDG, the world's leading technology media, research and events company. IDG publishes more than 300 magazines and newspapers and offers online users the largest network of technology-specific sites around the world through IDG.net (*www.idg.net*), which comprises more than 330 targeted Web sites in 80 countries. IDG is also a leading producer of 168 computer-related events worldwide, and IDG's research company, IDC, provides global market intelligence and advice through 51 offices in 43 countries. Company information is available at *www.idg.com*.

Sales Offices

Vice President/Publisher John Amato
john_amato@idgcommunications.com (508) 820-8279

■ NEW ENGLAND, SOUTHERN AND CENTRAL STATES
Director of Integrated Sales
Jeff Gallagher (508) 820-8133
Senior Sales Associate
Jess Roman (508) 271-7108
Mailing Address
P.O. Box 9171, 492 Old Connecticut Path
Framingham, MA 01701
Fax (508) 270-3882

■ WESTERN AND SOUTHWESTERN STATES
Director of Integrated Sales
Lauren Guerra (415) 978-3306
Sales Associate
Eran Butts (415) 978-3311
Mailing Address
501 Second Street, Suite 114
San Francisco, CA 94107
Fax (415) 543-8010

■ EASTERN AND SOUTHEASTERN STATES
Director of Integrated Sales
Hal Mentlik (631) 696-4498
Sales Associate
Megan Fadgen (508) 620-7761
Mailing Address
P.O. Box 9171, 492 Old Connecticut Path
Framingham, MA 01701
Fax (508) 270-3882

■ NORTHWESTERN STATES AND NORTHERN CALIFORNIA
Publisher
John Amato (508) 820-8279
Senior Sales Associate
Chris Da Rosa (415) 978-3304
Mailing Address
501 Second Street, Suite 114
San Francisco, CA 94107
Fax (415) 543-8010

Customer Service (888) 559-7327 toll free
Local or outside U.S. (847) 559-1573
E-mail: cw@omeda.com

CIRCULATION/DISTRIBUTION
Vice President
Debbie Winders (508) 820-8193
Circulation Manager
Diana Turco (508) 820-8167
Circulation Coordinator
Mary Kittredge (508) 820-8670

PRODUCTION
Vice President, Manufacturing
Chris Cuoco
Production Manager
Kim Pennett
Print Display Advertising
(508) 988-6909
Fax (508) 879-0446

STRATEGIC PROGRAMS AND EVENTS
Vice President, Marketing
Michael Garity (508) 766-5457
Vice President, Content Development
Derek Hulitzky (508) 620-7705
Vice President, Business Development, West
John Vulopas (508) 271-8024
Senior Director, Executive Programs, East
Sandy Weill (508) 620-7758
Vice President, SNW
Ann Harris (508) 820-8667

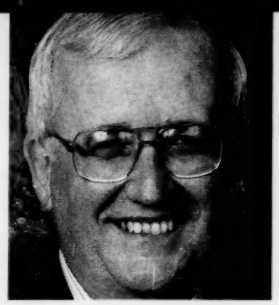
ONLINE ADVERTISING
Vice President/ Group Associate Publisher
Sean Weglage
(415) 978-3314
Fax (415) 543-8010
Online Sales Directors
James Kalbach
(610) 971-1588
Jennell Hicks
(415) 978-3309
Fax (415) 543-8010
Online Sales Manager
Matthew Wintringham
(508) 820-8218
Fax (508) 270-3882
Account Services Director
Bill Rigby (508) 820-8111
Fax (508) 270-3882
Online Sales Assistant
Joan Olson (508) 270-7112
Fax (508) 270-3882

IT CAREERS
Publisher
John Amato (508) 820-8279
Fax (508) 270-3882
Regional Account Manager
Enku Gubaie (508) 766-5487

LIST RENTAL
Postal and E-mail
Rich Green (508) 370-0832
rgreen@idglist.com
Mailing Address
IDG List Services, P.O. Box 9151
Framingham, MA 01701-9151
Fax (508) 370-0020

■ OPINION

Paul M. Ingevaldson



IT Is Not the Mailroom

IN 1989, Peter Drucker penned a famous article for *The Wall Street Journal* titled "Sell the Mailroom." In it, he made the case for shedding those elements of your business that "do not make a direct and measurable contribution to the bottom line." These he listed as "clerical, maintenance and support work." Drucker argued that such departments would have a much better chance of improving their productivity if they were part of an organization whose job it was to do that kind of work. If those departments stayed in-house, he wrote, the people working in them would have "little incentive to improve their productivity."

Somewhere along the way, senior management — always intrigued by ways to reduce expenses — determined that since IT was a support department, it was a perfect candidate for outsourcing.

What they missed is that IT supports the very heart and soul of the company. If the cafeteria doesn't open on time, or the maintenance crew fails to show up, or the outside attorneys lose a case, the company still goes on. But let IT systems — hardware or software — be compromised, and the business could shut down. I guess I would call IT the über-support department.

But look at what is happening in many of our IT shops. CEOs are challenging CIOs to look into outsourcing as a way of saving money in these tight financial times. Outsourcers prepare enticing proposals filled with promises of cost savings that most senior executives would have a hard time walking away from. And when a proposal is accepted, the company usually ends up transferring some or all of its IT people to the outsourcer. Drucker's old pitch is delivered again, and the executives are told that the people in IT will have a better chance of advancement when they are working for a technology company. But what no one seems to realize in time is that this is another way of saying that the best people will now be employees of someone else and at some time will be transferred off of your account.

■ What senior management has missed is that IT supports the very heart and soul of the company.

If, down the road, something happens, who is going to know how to fix it? If we want to know how something works in the system, whom are we going to ask?

By outsourcing, we are losing some of our best talent, the people who understand how our systems work — and therefore how the company works. Their knowledge is so deep that it's not a stretch to think that among them could be the people who might lead the company in the future. But they're gone now, turned into someone else's assets.

Of course, there have been many well-known examples of outsourcing nightmares, both in the private sector and in government. Oftentimes, these disasters are precipitated by communication problems, difficulties in managing people working in widely disparate time zones, and the loss of face-to-face discussions.

There are also many examples of companies that decide to drop their outsourcing relationships and reabsorb the work back in-house. In trying to make a bad decision right again, these companies face daunting costs and problems as they try to rebuild their IT infrastructures in a short time.

As the economy begins to emerge from recession, my prediction is that the underperformers will include a disproportionate number of companies that decided the lean times called for the drastic measure of outsourcing IT. In the past, postrecession periods have led to strong demands for IT systems that could enable companies to take advantage of growing markets and increased access to capital. The companies that have active and thriving IT departments will definitely hold a competitive edge.

Of course, that assumes that the outsourced cafeteria opens on schedule and the IT people get their coffee! ■

Paul M. Ingevaldson *retired as CIO of Ace Hardware in 2004 after 40 years in the IT business. You can contact him at ingepi@aol.com or visit his Web site,* www.paulingevaldson.com.

CLEAR AND PRESENT OPPORTUNITY.

While today's economy may be challenging, it may also be an opportunity to find a better business partner. Someone who can provide you with the resources you want and the tailored solutions you need. At Qwest, we provide integrated voice and data network solutions designed to help your business boost efficiency and productivity. So you'll get big business resources with small business resourcefulness. **Learn more at qwestsolutions.com.**

Get Qwest. Get Nimble.

Qwest BUSINESS

Copyright © 2009 Qwest. All Rights Reserved.

Sea otters have up to a million strands of hair per square inch.

They can't keep up with the continuous process of cleansing.
But you can. With proven data integration software and services from SAS.

www.sas.com/otters

SAS SOFTWARE HELPS COMPANIES ACROSS EVERY INDUSTRY DISCOVER INNOVATIVE WAYS TO INCREASE PROFITS, MANAGE RISK AND OPTIMIZE PERFORMANCE

SAS® Data Integration

Visit www.sas.com/otters for a free TDWI white paper

- Data quality and data profiling
- Connectivity and metadata
- Data cleansing and enrichment
- Data federation
- Migration and synchronization
- Master data management
- Extraction, transformation and loading (ETL)

sas | THE POWER TO KNOW.